

GREECE

# SUSTAINABILITY

REPORT 2011

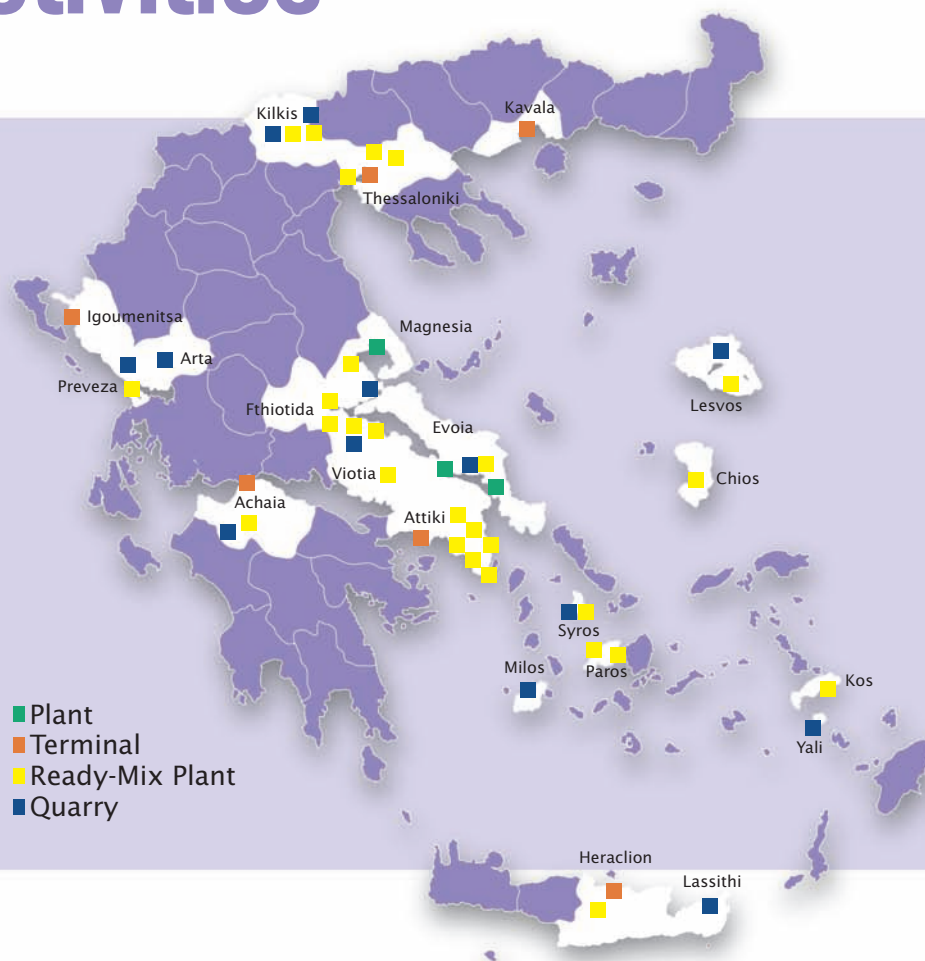
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bringing materials to *life*™

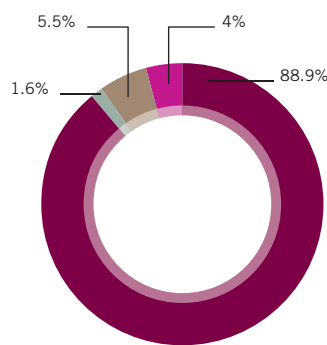
# Our activities

Heracles General Cement Company, a member of Lafarge, is Greece's largest cement producer, bringing to the market differentiated, innovative products to meet customer and end-user needs. The company operates three cement production plants, six cement distribution terminals, twenty three industrial minerals and aggregates quarries and twenty six ready-mix concrete plants, which sustain its commercial presence throughout Greece.



**277.5**  
SALES 2011  
(IN MILLION EUROS)

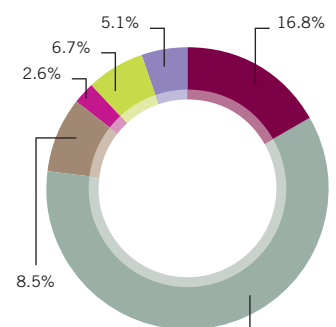
## SHAREHOLDERS



- Lafarge
- Institutional Greece
- Institutional other countries
- Individual

As of 31 December 2011 Lafarge Group owned 88.99 % of the shares in Heracles.

## EMPLOYEES DISTRIBUTION



- Central functions
- Cement plants
- Terminals
- LAVA quarries
- RMX plants
- Aggregates quarries

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If there is anything you wish to discuss in this report, please contact us at: [giannarosc@lafarge.gr](mailto:giannarosc@lafarge.gr)

### **Coverage of this report**

This report covers the activities of Heracles General Cement Company during the 2011 calendar year.

As of April 2012, the cement business (which includes LAVA) has been brought together with the aggregates and concrete businesses of Lafarge in Greece to operate as one business. This is an organizational change that is taking place throughout the Lafarge Group globally; the legal structure is unchanged.

In the light of this and to assist our stakeholders follow our progress through the transition to one business, we have included in this report where possible information about the activities and sustainability performance of the aggregates and concrete business during 2011. Graphs and tables, while continuing to show the performance of the cement business (up to and including 2011 and including progress against targets), also include where possible data for the aggregates and concrete business for 2011 (denoted by A&C). This assists us and our stakeholders in establishing the baseline for consolidated reporting in the future, encompassing what is now one business in Greece.



# Introduction from the CEO

Thank you for taking the time to look at our 2011 Sustainability Report. This is the fourth annual report on sustainability that we have produced and is intended, like the previous ones, to help our stakeholders consider and comment on our actions and progress.

Since the last report, there has been no change in our commitment to sustainability. But there has been a further worsening in the economic circumstances in Greece and this naturally affects us all. Two things in particular concern me. Poor morale and worries about personal circumstances can have an adverse affect on concentration at work increasing risks of accidents. Second, economic stress can put pressure on values and ethics. I am absolutely determined that, whatever the circumstances, the values and principles that underpin this business shall be upheld.

This report is being published as “One Lafarge” reflecting our new organization. This new organization will improve the offer we make to our customers, make better use of our expertise and reveal opportunities that we may have missed in the past. Specifically in Greece, with a market of much reduced size, it is even more important that we reshape our business appropriately and respond to the reality of circumstances, while continuing to manage our employees fairly and with respect.

Looking more specifically at our sustainability program, in most areas we are on track but in some we face difficulties. Often this is where progress is not only dependent on our actions. For instance, we brought on stream the new cement grinding process at Halkis (see page 25) but have not sustained earlier progress in reducing CO<sub>2</sub> emissions overall. In large part this is a function of market demand for different types of product but we would also make more progress if we were able to make more beneficial use of alternative fuels, as happens in other EU countries. As for A&C I remain very positive about the scope for value-added products in the future; our aggregates and concrete division have already made very good progress and I look forward to some flagship projects in 2012.

It was a small but nevertheless significant step to move to new headquarters in 2011. Their modern and efficient style symbolizes the future of this business. And the opportunity to make our art collection available to the public was an additional benefit which I hope stakeholders will appreciate.

We continue to welcome comments on these and other aspects of our sustainability program and I look forward to another year of progress in 2012.

**Pierre Deleplanque**  
*Chief Executive Officer*

# Values and governance

Our values did not change in 2011 but our efforts to embed them in everything we do continued.

## Values framework

There has been no change in the framework of values that guide us, nor in our commitment to them. We have a **Code of Business Conduct** for Heracles that is consistent with the Lafarge global code but also reflective of legal conditions in Greece. And overall, we remain guided by the Lafarge **“Principles of Action”**.

## Securing those values

The first level of training in our Code was completed in 2011. This is the program that was begun in 2009 and includes a full-day session of briefing, discussion and scenario-testing, to ensure the Code and its implications are understood. We are now planning the second level which will run for the next two years and employ slightly different techniques appropriate to the target audience.

## Tackling specific issues

During the year we devoted additional resources to fraud prevention with special training for our Internal Control Coordinators (see box to the right). Conflict of interest is an issue that requires careful application of individuals' judgment and so in 2012 we plan to expose c. 500 employees, already trained in the Code, to a questionnaire aiming to improve their awareness of potential conflicts. Training in the Code of Conduct has also been a vehicle for maintaining compliance with our competition policy.

## Governance

### Corporate governance

March 2011 was the date when our new **Code of Corporate Governance** came formally into effect. We believe it to have been a success, not least because it was defined specifically for our company and is not derived from a generic template.

## internal control

### INTERNAL CONTROL AND FRAUD PREVENTION

One of the strengths of our internal control mechanism is the presence of 25 Internal Control Coordinators (ICCs). These are individuals who have operational roles but, additionally, are trained and empowered to address internal control issues in their areas of work.

In April 2011 we gave this important group a full day's additional training, in the company of the Internal Audit and Control Manager. The agenda included:

- the internal control systems integrated framework and its implementation in Heracles
- the new Greek legislation on Code of Corporate Governance and internal control systems
- fraud prevention techniques, the application of “Red Flags” in fraud control and fraud risk assessment.

This was an important meeting which generated substantial and constructive feedback.

### **Oversight, executive responsibility and risk**

Throughout 2011, the company was subject to the oversight of the same eight-member board and supervised by the same Executive Committee as described in the **2010 Sustainability Report**.

But since then, to accompany our transition to a single country organization, we have sought and obtained shareholders' approval for a new Board structure that gives substance to this transition. The Executive Committee has also been changed with the new composition reflecting our enhanced entrepreneurial focus. Our Corporate Internal Regulation has also been revised.

The Risk and Audit Committee continued to meet every four months throughout 2011; the risk assessment process, led by the internal audit manager and involving the senior managers of the business, was especially focused on fraud and internal control.

### **Sustainability**

There has been no change in leadership, in 2011 or subsequently, and the Chief Executive continues to provide overall direction with the backing of the Board and the Lafarge Group. More detail is provided on page 8.

### **Shareholders' meeting**

The 2011 meeting was the first held under the arrangements we introduced to improve transparency including extensive use of the website to give shareholders easy access to material; the 2012 meeting has also been run on a similar basis. We believe that the response from investors has been positive and that the arrangements are practical evidence of our commitment to transparency.

## principles

### HERACLES CODE OF CORPORATE GOVERNANCE - PRINCIPLES

1. Equal treatment of shareholders
2. Assiduity and fidelity
3. Non-competition
4. Disclosure any conflicts of interest
5. Transparency of transactions
6. Improvement of shareholder information
7. Publication through the "Officially Defined Mechanism for Central Storage of Regulated Information"
8. Facilitation of shareholder attendance and voting at the General Meetings
9. Protection of minority rights
10. Transparency of the information on corporate governance

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##### **For a copy of our Code of Business Conduct**

visit [http://www.lafarge.gr/Code\\_Business\\_Conduct\\_eng.pdf](http://www.lafarge.gr/Code_Business_Conduct_eng.pdf)

##### **For a copy of our Code of Corporate Governance**

visit [http://www.lafarge.gr/Corporate\\_Governance\\_Code\\_eng.pdf](http://www.lafarge.gr/Corporate_Governance_Code_eng.pdf)

##### **For a copy of Lafarge Principles of Action**

visit [http://www.lafarge.gr/Lafarge\\_Group\\_Principles\\_of\\_Action\\_eng.pdf](http://www.lafarge.gr/Lafarge_Group_Principles_of_Action_eng.pdf)

##### **For a copy of our 2010 Sustainability Report**

visit [http://www.lafarge.gr/Sustainability\\_Report\\_2010\\_eng.pdf](http://www.lafarge.gr/Sustainability_Report_2010_eng.pdf)

# Sustainability management

We have made good progress with the 2012 Ambitions and look forward to addressing those that will define our progress to 2020. We continue to manage our sustainability program with well-defined roles and responsibilities, action plans, performance indicators, environmental management systems and audits.

## Sustainability Ambitions – our guide

The direction and pace of our sustainability program is defined by our Sustainability Ambitions. These are the objectives and targets that we set at periodic intervals; they cover all aspects of sustainability and are aligned with the global Sustainability Ambitions of the Lafarge Group.

During 2011 we were addressing our Sustainability Ambitions 2012; these were defined in 2009 for completion by the end of 2012. A summary of our progress appears on pages 10-11. The Lafarge Group has since announced the Sustainability Ambitions that will guide us through to 2020, towards a vision of the future where we make a net positive contribution to society as a whole.

## Business objectives

Business objectives for 2011 were health and safety, sustainability, performance and people development. A key focus was improvement and performance excellence to ensure the viability and continuity of our business in the future.

## Managing the program

Roles and responsibilities, as they operated in 2011, are described in the box to the right. Since then, the transition to a one country organization has enabled us to give the sustainability manager responsibilities across all business lines, reporting to the Chief Executive and supported by sustainability professionals in the cement, aggregates and concrete businesses.

Sustainability Ambitions and business objectives combine with our capital expenditure decision-making process, three-year reviews, the setting and monitoring of individual objectives and the monitoring of Key Performance Indicators (KPIs) to make up the Heracles management framework. Individual objectives for each manager are defined annually; sustainability is included according to the individual's role and responsibility and all objectives must be "SMART" (Specific, Measurable, Ambitious, Realistic, Time-bound).

## management

### ROLES AND RESPONSIBILITIES

**Lafarge Group** – defines the group Sustainability Ambitions

**Heracles Executive Committee (chaired by Chief Executive)** – has overall responsibility for the sustainability program

**Industrial General Manager** – member of Executive Committee and day-to-day lead on sustainability matters

**Sustainability Manager** – develops and oversees corporate action plan for progress

**Senior managers** – responsible for one or more Sustainability Ambitions as appropriate

**Plant managers** – responsible for plant performance contributing to relevant Sustainability Ambitions

**All employees** – within the limits of their duties, contribute to the sustainability program and must abide by the environmental policy.



### Environmental policy and management

**Our environmental policy** reinforces our sustainability program and gives specific commitments concerning our operations, major modification projects, resources, training and research, procurement, product stewardship and stakeholder relations. There were no changes to this policy in 2011 and the same system of environmental performance indicators defined by the Lafarge Group operated as in previous years.

The operations of all our facilities are subject to strict environmental terms, imposed as part of the operational permit. These describe proactive and controlling measures for avoiding and minimizing potential environmental impact.

Environmental management systems consistent with the Lafarge standard and complying with ISO 14001 remain in use at Milaki (since 2004) and Volos (since 2010); during 2011 the Halkis plant implemented such a system which will be certified in the second half of 2012.

### Environmental audits

Regular environmental audits help raise and maintain standards in areas including noise and dust suppression, pollution control, and waste and water management. In 2011 we continued our audit program including its extension to our remaining distribution centers and to LAVA quarries.

### Environmental audit program

		2005	2006	2007	2008	2009	2010	2011
Cement Plants	Volos							
	Milaki							
	Halkis							
Cement Terminals	Drapetsona							
	Rio							
	Thessaloniki							
	Iraklio							
	Igoumenitsa							
LAVA quarries	Kavala							
	Altsi							
	Milos							
	Yali							

The audit cycle has continued and is being extended. In 2012 Volos will be audited again, along with one more LAVA quarry and the Aliveri aggregates and concrete site.

### Environmental investment Cement

(Thousands of Euros)

	2010	2011
Capex investments	6,275	4,971
Waste management	322	504
Cleaning and watering	435	912
Restoration-rehabilitation	553	474
Recycling	136	74
Total	7,721	6,935

Capex was not as high as in 2010, but investments continued despite the market conditions. Increased expenditure on cleaning and watering and waste management reflects the cleanliness and tidiness program we have been running.

external input

### TAKING PART

By being members of sustainability organizations and networks, our own sustainability program is informed, inspired and strengthened. As of end 2011 we were:

- signatories to the Global Compact and founder members of the Hellenic United Nations Global Compact Network;
- a founder member of the Greek Business Council for Sustainable Development (Lafarge is a member of the World Business Council for Sustainable Development);
- members of the Hellenic Corporate Social Responsibility Network
- a founder member of the Federation of Hellenic Recycling and Energy Recovery Industries
- in a global partnership with WWF.

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For a copy of our Environment Policy

visit [http://www.lafarge.gr/Environment\\_Policy\\_eng.pdf](http://www.lafarge.gr/Environment_Policy_eng.pdf)

# Progress...

Target	Deadline	2010 performance against target	2011 performance against target	Comment and Plans
<b>MANAGEMENT</b>				
On safety our target is to reduce the lost time injury frequency rate (LTIFR) to 1.3	2010	Achieved (0.3)	<b>Achieved (0.4)</b>	The injury rate in 2011 corresponds to one Lost Time Incident amongst Heracles employees. Our aim remains to achieve and sustain an incident rate, for employees and contractors, of zero.
Full compliance with the Lafarge Group Competition Policy	2010	Achieved	<b>Maintained</b>	We remain in compliance.
Training of all Heracles plant management teams in applying the Lafarge group stakeholder relations management process	2010	Achieved	<b>Maintained</b>	All our plant management teams and key Group Managers are trained and develop annual action plans to manage stakeholder relationships.
On customers, carry out an annual customer satisfaction survey on both bagged and bulk cement business.	2010	Completed for bagged customers	<b>Completed for ready-mix customers</b>	A survey of ready-mix customers has generated information that is relevant to the cement business.
Implement the OTIFIC (On Time, In Full, Invoiced Correctly) Standards in operations.		In progress	<b>In progress</b>	Preparation actions are progressing and further actions (software, IT, weighing accuracy and automatic invoices, applications for interactive communication with deliveries) have been initiated.
Reach 20% of women in senior and executive management (Lafarge Hay Grades 18+)	2012	Achieved (30%)	<b>Maintained (32%)</b>	We have a good record on women in management positions; we now focus on increasing the overall number of women in our operations.
<b>SOCIAL</b>				
By 2010, establish a comprehensive occupational health program including at a minimum regular medical examination	2010	Achieved	<b>Maintained</b>	Mapping of health risks has been done and a general protocol and Health Surveillance Plan was implemented at all sites. Special Surveillance protocols for critical jobs are also in place.
<b>ENVIRONMENT</b>				
Have 100% of our sites audited environmentally at least every four years	Permanent	In progress	<b>Achieved</b>	We have now covered all cement plants and terminals.
By 2010 reach a rate of 100% of quarries with a rehabilitation plan complying with Lafarge standards.	2010	Achieved (100%)	<b>Maintained</b>	
By 2010 all our quarries will have been screened according to criteria validated by WWF International and those with realizable potential will have developed a biodiversity enhancement plan by 2012.	2010	Achieved	<b>Maintained</b>	
	2012	In progress	<b>In progress</b>	Volos (Agria and Anavra) quarries validation will be completed before end of 2012 and action plans will follow
By 2010 cut our net CO2 emissions per metric ton of cement produced by 11% as compared to 1990	2012	In progress (-8.34%)	<b>In progress (-7.36%)</b>	We are not able to meet our target due to continuing market difficulties and consequent reliance on the export market which requires cement with a higher clinker content.
Cut our dust emissions in our cement plants by 40% over the period 2005-2012	2012	Achieved (-95.04%)	<b>Maintained (-94.99%)</b>	Out-performance of target for dust has continued.

Target	Deadline	2010 performance against target	2011 performance against target	Comment and Plans
<b>ENVIRONMENT</b>				
Cut our NOx emissions in our cement plants by 12% over the period 2005-2012	2012	Achieved (-13.13%)	Maintained (-20.66%)	We are well ahead of our target and have made further progress in 2011.
Cut our SOx emissions in our cement plants by 20% over the period 2005-2012	2012	Achieved (-63.36%)	Maintained (-47.41%)	We are out-performing our target. Our performance in 2011 was affected by increased use of a plant whose raw materials mix includes naturally-occurring sulfur.
By 2010 have a baseline for persistent pollutants in our cement plants for 100% of kilns and reinforce our Best Manufacturing Practices to limit emissions	2010	Achieved	Maintained	Measurements continue to take place regularly in accordance with the production plan.

# ...and plans

The previous table summarizes our progress with our sustainability ambitions 2012 - the targets that we set ourselves in 2009. In June 2012 Lafarge Group announced the Sustainability Ambitions 2020 that will shape the next stage of progress for all businesses in the Group – including Heracles.

With its Sustainability Ambitions 2020, Lafarge is taking a new step forward by committing to three areas of sustainable development through 34 ambitions, featuring specific and very demanding targets. These 34 ambitions include nine major targets by 2020, based around three main pillars: Building communities, building the circular economy and building sustainably.

## Lafarge Sustainability Ambitions 2020

### Building communities

- Health and Safety: reach zero fatalities and virtually eliminate lost-time incidents
- Diversity: having 35% of senior management positions held by women
- Volunteer working: contribute 1 million volunteer hours per year to locally selected projects
- Local job creation: having 75% of country operations implementing a plan for local job creation

### Building the circular economy

- CO<sub>2</sub> emissions: reduce CO<sub>2</sub> emissions by 33% per ton of cement (compared to 1990 levels)
- Non-fossil fuels: use 50% of non-fossil fuels in cement plants by 2020 (including 30% biomass)
- Re-used and recycled materials: 20% of our concrete containing reused or recycled materials

### Building sustainably

- Affordable and sustainable housing: enable 2 million people to have access to affordable and sustainable housing
- Sustainable products and services: increase to €3 billion per year sales of new sustainable solutions, products and services.

We are now developing our own Sustainability Ambitions 2020 that are consistent with those of the Group while being specific to Heracles and reflecting its role in Greek society. Details of the sustainability program including Sustainability Ambitions 2020 will be in our 2012 Sustainability Report.

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For a copy of Lafarge Sustainability Ambitions 2020 visit [http://www.lafarge.com/wps/portal/2\\_10-ambitions-2020](http://www.lafarge.com/wps/portal/2_10-ambitions-2020)

# Understanding our business

2011 was another difficult year with financial and political uncertainty continuing to affect our market. But we are a long-term business and we continued with our plans to be more integrated and more entrepreneurial, producing more sustainable products for the future.

## Business in 2011

Construction activity in Greece in 2011 was 70% lower than it was four years ago. Activity in 2011 (by volume) was more than 36% lower than in the corresponding period in 2010. This decline has affected the cement industry, including our business, and the activities of our aggregates and concrete business.

In cement, the declining domestic market obliged us to rely more on exporting cement to supply overseas markets, such as those in North Africa. However, international markets were also limited and our exports were 27% lower than in 2010. We continue to believe that Greece has in the medium-term a stable domestic market for cement and that we can best thrive in that market by increasing productivity and efficiency, optimizing production costs, and produce cement products that are lower in CO<sub>2</sub> emissions than our competitors'.

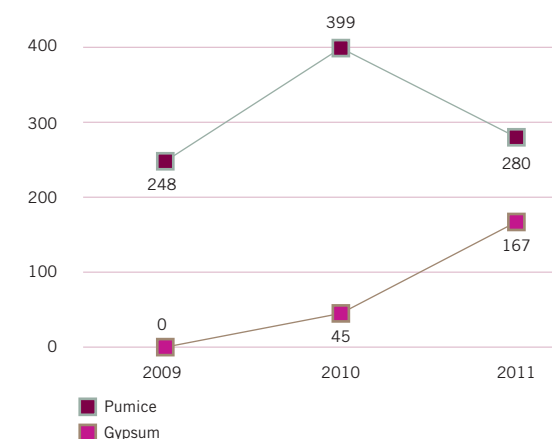
The problem of illegal imports remains. We can and do compete successfully with legal cement imports. But we look to the authorities to prevent the Greek cement market being undermined by imports of products that have been produced without due regard for quality, the environment, health or safety.

## Aggregates and concrete

Our aggregates and concrete business was similarly affected by the state of the construction industry in Greece. Nevertheless the business was successful in bringing some new value-added products to the market and is well-placed to offer to customers appropriate sustainable construction solutions and to address sustainable construction challenges.

### LAVA exports

(Thousands of metric tons)



#### CEMENT

Cement is a hydraulic binder and a key ingredient in concretes and mortars.

#### AGGREGATES

Aggregates are obtained by quarry extraction and grinding into different sizes. Aggregates can also be obtained from sand and gravel extraction but in Greece this is a very limited activity.

#### CONCRETE

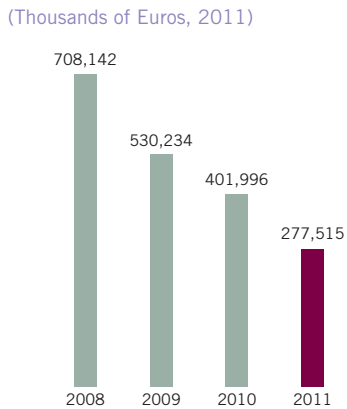
Ready-mix concrete is a mixture of aggregates, cement, additives and water which is used in situations ranging from road sub-bases through to structural elements in very large and complex buildings.

#### LAVA'S PRODUCTS

##### - INDUSTRIAL MINERALS

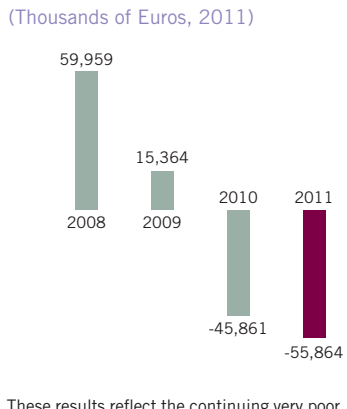
LAVA S.A. extracts the industrial minerals pumice, gypsum, pozzolan and silicates. Pumice is used in construction (lightweight blocks, lightweight concrete), geotechnical projects, agriculture, industry and cement production. Gypsum is used in cement production. Pozzolan and silicate are both used in cement production and in industry.

### Turnover



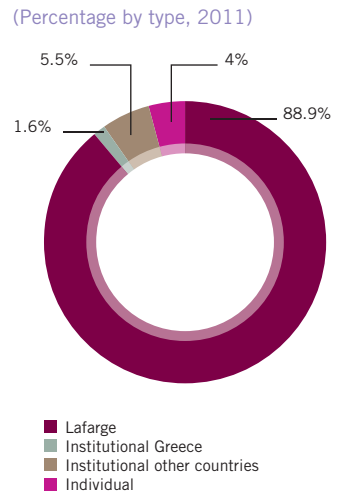
Our turnover declined again as a result of the economic situation.

### Net profit/loss after tax



These results reflect the continuing very poor economic situation in Greece in 2011.

### Shareholders by type



The Lafarge Group is our largest shareholder.

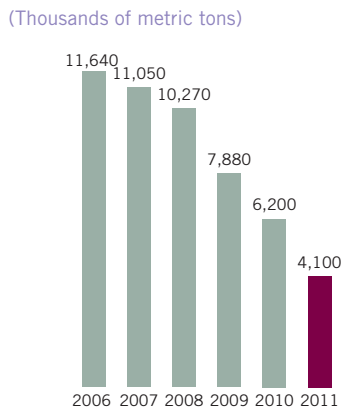
### Who benefits from our operations

(Cash value added, millions of euros)

Revenues : Sales & financial interest received	277.5
Cost of good sold	240.1
<b>Cash Value added</b>	<b>37.4</b>
1 - Taxes to be paid to government	-0.1
2 - Paid to investor for providing capital	0.0
3 - Paid to lenders as a return on their borrowings	3.0
4 - Retained for growth	-55.9
5 - Paid to employee for their services	89.7
6 - Community investment	0.5

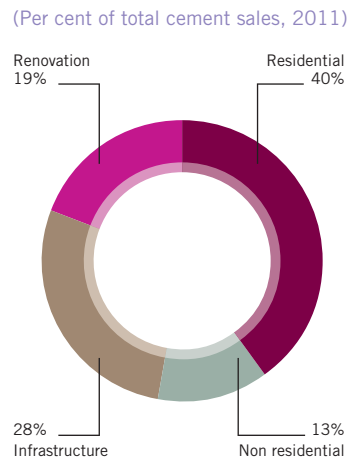
Our employees are the group that benefits the most from the value added by Heracles.

### Grey cement market in Greece



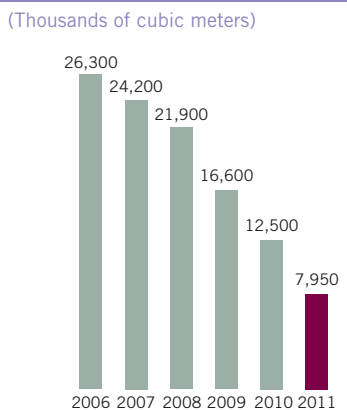
Grey cement constitutes the very large majority of sales in Greece; white cement sales are minor. Demand continues to decline as a result of the recession and austerity measures. We believe that long-term domestic demand will be higher than at present. 2006-2009 data is from Greek Cement Association. Most recent years are our own estimates.

### Use of cement in Greece

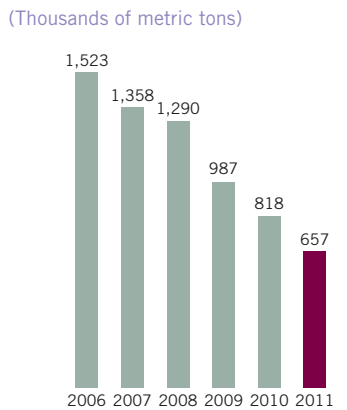


The construction of homes and infrastructure accounts for nearly 70% of the market.

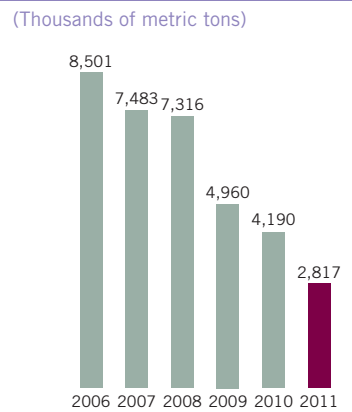
### Concrete market in Greece



### Lafarge Greece concrete production



### Lafarge Greece cement production



Production has dropped in 2011 as a result of the economic situation.

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# Health and safety

Health and safety is still our top priority. The journey to a safer working environment includes tackling specific processes and addressing culture, behavior and management. Results for 2011 indicate that while the progress of recent years is being maintained, there is no room for complacency. The safety of those who work with us is also our concern. We know we can set an example for higher safety standards in the entire Greek industrial sector.

## Action in 2011

In 2011 we set out to address three areas: safety leadership, risk assessment and control, and the processes and tools we employ for safety management. We carried out a wide range of projects and initiatives in these three areas, (some described on these pages) while continuing to track our progress with both leading and lagging indicators. The latter (the number, frequency and severity of incidents) are very slightly worse than 2010 but still show improvement on the prior years. Leading indicators include near-miss reporting, health and safety inspections, "Visible Felt Leadership" safety discussions, housekeeping rating, good practice dissemination, serious event reviews and health and safety training.

## Safety leadership

This area of work has encompassed projects designed to empower and involve line management in health and safety at each site, work on critical behaviors (see box to the right), the promotion of risk assessment and near-miss reporting. Also, each member of the Executive Committee was charged with sponsoring and leading one specific health and safety action.

## excellence

### HEALTH AND SAFETY EXCELLENCE FOR AGGREGATES AND CONCRETE

Aggregates & Concrete have been re-confirmed as members of Lafarge Health and Safety Excellence Club which comprises the 30% of all Lafarge business units that are excellent in safety, with zero fatalities (Lafarge, contractors or third party) over the past 2 years, low incident frequency rate and a strong level of maturity.

## safe behavior

### CRITICAL BEHAVIORS WORKSHOP

Behavior is key to safety, as we see from the analysis of incidents. Changing our behaviors and habits takes a lot of effort; it involves a personal assessment of risk and making safe choices.

Several workshops were held at the Halkis and Milaki plants to develop the content and identify the people who will lead a front-line campaign on critical behaviors. The eight critical behaviors identified were: having the correct body position, checking tools and equipment, sustaining tidiness, staying focused, respecting my personal limits, using the suitable equipment, standing at the correct spot, watching my step.

These workshops continue the work that began in 2010; they are designed to promote sharing of real-life examples and to brainstorm ideas. There is a commitment to implement the ideas from the workshops to create messages and tools that are used in rolling out the campaign across the whole business.

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For a copy of our Health & Safety Policy  
visit [http://www.lafarge.gr/Health\\_Safety\\_Policy\\_eng.pdf](http://www.lafarge.gr/Health_Safety_Policy_eng.pdf)

**Risk Assessment and Control**

Additional safety-related advisories and SOPs (Standard Operating Procedures) have been finalized and made operational in the following areas: LOTOTO (see page 18 of the 2010 Sustainability Report), conveyor systems, customer site safety (see page 37), safe loading of trucks and cargo securing. A training program to implement SOPs for quarry safety, in preparation for the implementation of the Group quarry safety management good practice, was conducted. Assessment and control of risks in ports has been a major focus since 2008 and in 2011 this project along with our Road Safety Program received the top award in Transport Safety in the Lafarge Group Cement Awards Competition.

**Safety management**

We have continued to invest in health and safety management by implementing a self-assessment cycle for continuous improvement, setting up a process for rewarding good performance and initiatives, establishing software platforms for data management and running the 2011 health and safety training plan. Our system for recording and presenting health and safety KPIs accords with the Lafarge global standard and covers the full range of leading and lagging indicators.

empowering people

HEPHAESTUS AT VOLOS

Hephaestus is the Greek ancient god of technology, blacksmiths, craftsmen, artisans, metallurgy and fire. It is also the name chosen for the project, started at the end of 2010, to empower and mobilize middle management at the Volos plant in health and safety.

A team was created for each of a number of safety topics (e.g. LOTOTO, housekeeping, mobile equipment, conveyor systems, risk assessment and critical behavior) and team members appointed from throughout the plant's organization, but principally from middle management. Each team was charged - on a self-organizing basis - with leading for its chosen topic using whatever mix of initiatives, communications materials, KPIs, action plans and team events it deemed appropriate.

Already, this project has seen a much enhanced level of involvement of middle managers in health and safety at Volos, with more and more supervisors taking responsibility for safety issues, improved team cooperation and the generation of fresh ideas to stimulate further improvement. It has also been effective in improving team spirit and the tendency to collaborate, which in turns contributes to further safety enhancement.

**Health and safety in cement**

(Number of incidents – contractors and employees)

	Fatalities	LTIs	Contractor LTIs
2007	1	6	6
2008	-	8	2
2009	-	4	2
2010	-	1	1
2011	-	1	2

The data shows that continuing attention is essential.

**Health and safety in aggregates and concrete**

(Number of incidents – contractors and employees)

	Fatalities	LTIs	Contractor LTIs
2007	0	0	0
2008	0	0	1
2009	0	1	1
2010	0	0	1
2011	0	1	1



# housekeeping project



## YALI QUARRY AND ELSEWHERE

The Yali pumice quarry was one of 19 sites chosen for participation in the 2011 housekeeping project. It is the biggest pumice quarry in the world but located on an island which has restricted access, is hampered by poor weather and lacks the communication systems found in other locations in Greece. The project started with an audit by members of the Executive Committee, frequent visits by LAVA management, health and safety inspections and record-keeping, and this in turn generated an improvement plan. Project delivery was improved by a more formal approach to CapEx investment and the instigation of annual shutdowns. In the first year, signage was improved, storage completely reorganized and categorized, and 150 metric tons of scrap material moved to suitable disposal and recycling sites - all in accordance with Contractor Safety Management standards. A waste recycling area has been established.

The project has increased health and safety awareness, involvement and accountability at the site, with the creation of an on-site health and safety supervisor and regular meetings with the LAVA management. By the end of 2011, the site had achieved a score of 77% on the housekeeping project scale, compared with 44% at the outset in 2010. The Yali site was in the top three of those nominated for the relevant Lafarge award. Other sites in the housekeeping project have achieved improvements on a similar scale, if not quite so dramatic, and it is now planned to extend the project in 2012 to nine further sites, including those in our aggregates and concrete business.

### Lost time injury frequency rate

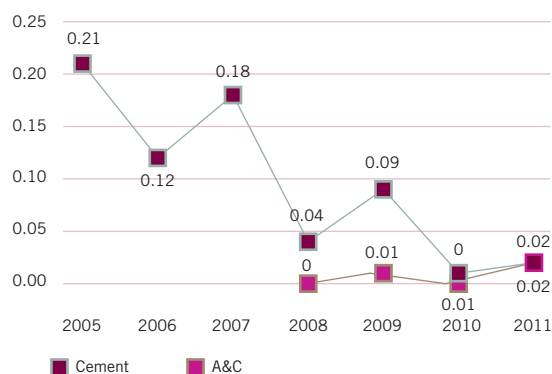
Number of accidents leading to loss of time per million hours worked



There has been a slight increase in 2011 but the level remains well below that in the period prior to 2010.

### Lost time injury severity rate

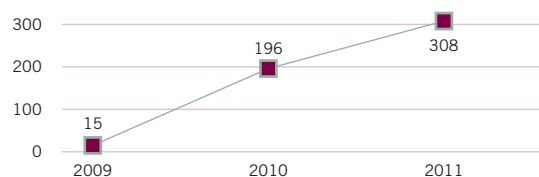
Number of calendar days lost as a result of accidents per thousand hours worked



There has been a slight increase in 2011 but the level remains below that in the period prior to 2010.

### Near-miss reporting

Number of near-miss reports submitted (Cement)



We define a near miss as an incident which didn't happen thanks only to luck. We encourage our employees to report these situations so that we can take corrective measures and avoid potential incidents. As of 2012 near-misses reported will include data from aggregates and concrete.

# People

Our strategy is focused on the careers that our people can enjoy while working with our company. Previous efforts are delivering results and specific initiatives have earned group-wide recognition.

## The strategy

Our strategy is to ensure we provide our people with a career – not just a job. This is of benefit to both individuals and the business, and helps us to develop an organization which is fit for the future.

Individual Development Plans (IDPs) remain central to that strategy and help ensure the best-possible developmental ownership by the individual targeting the skills and competencies required by our business.

In difficult times, which affect every company in Greece, maintaining morale is vitally important. Focusing on individuals' development needs helps with this challenge because it provides direction and stimulus when other circumstances appear uncertain. In 2011, in the face of difficult economic and market conditions, we aimed to minimize impact on our employees. We are especially pleased that 31 people obtained an internal promotion in 2011.

## Progress with IDPs

As people development is an important element of our business and a strong priority, it is essential to focus even more on the IDPs of our people and take time to give constructive feedback. A combination of alternative actions has been developed, targeting the qualitative improvement of IDPs from various perspectives in the last four years. These actions, combined with management commitment, have changed to a great extent the culture regarding IDPs. The population has understood that a well-built IDP, if thoroughly designed and effectively implemented, is a key development tool. This year the IDP has been considered an essential prerequisite for achieving progress and an integral part of the annual appraisal process. Consequently, performance appraisals and IDPs in particular have significantly improved and supported the development of our people.

## development

### PLANT TEAM ASSESSMENT

The primary objective of the Plant Team Assessment (PTA) process is to enable the plant teams to ensure the plant team joins and remains in the Lafarge Excellence performance club; this is now even more challenging under the current socio-economic and market context.

Through a robust PTA process we identify each plant team's needs for development, we set priorities according to the business objectives and stakes, we develop a streamlined target organization and we build the action plans to achieve this.

The close cooperation of Industrial and Human Resources through the PTA process provide a solid framework for mobilizing the organization and leading to a constructive and dynamic PTA outcome with successful implementation and prepares the plants to anticipate the future business needs.

### Use of IDPs in performance appraisal

(Percentage of IDPs in different quality categories, 2009-2011)

	2009	2010	2011
Very Good	9.7%	59.9%	76.4%
Good	44.1%	21.9%	14.3%
Need Improvement	46.2%	18.3%	9.3%

## Internships

Cooperating with educational establishments and providing internships continues to bring benefits to the business and opportunities for young people. We hosted 76 interns during the year and greatly valued the creativity and open-mindedness that they brought into our organization.

## Training, road safety and families

2011 was the first full year of our road safety training program. The main objective is to eliminate driving and road transport-related injuries and fatalities; it includes raising road safety awareness, mobilizing people and establishing a systematic approach. Importantly, the target audience for the program extends to the families of our employees, especially those reaching driving age, because of their high risk exposure and their influence on those around them.

The core of the program is a 3-hour workshop and a facilitated discussion which ensures participation by all attending. In 2011 we ran a pilot session, a "train the trainer" session and seven more sessions at our major sites and our head office. The program continued also in 2012 and now eighty five per cent of the employees is covered. Plans for this year include completion plus extension to a wider population outside the company barriers.

### Investment by training area

(Percentage of total hours of training in different categories, 2011)

	Cement incl. LAVA	A&C
H&S	37.48%	14.26%
Technical	29.17%	47.66%
IT Training	4.94%	1.91%
Language training	6.55%	2.61%
Management Training	3.34%	24.99%
Other types of training	18.52%	8.56%

Health and Safety is our number one training priority and is therefore the subject of the most training hours overall.

# technical competencies

## CERTIFICATION PROGRAMS FOR KEY TECHNICAL STAFF

The development and implementation of a comprehensive certification program for key technical staff in our plants supports the restructuring of operations and quickly improves performance.

The focus of the program is the development, training, performance monitoring and eventual certification of Kiln Control Room Operators (CROs) & Maintenance Inspectors, who must be able to achieve the high standards of kiln operation & inspection performance that the Group sets.

The program defines a specific certification path that provides customized development trainings, based on individual gap analysis, and a selection of appropriate performance measures. As a result, by 2012, the majority of the CROs and Inspectors in the plants will have been certified.

The certification program is a collaborative project involving Human Resources, the plants' management and the Industrial GM. But it was also achieved in strong partnership with the Lafarge Technical Centre to meet the latter's requirements for certification. Its success is such that it will now be rolled out across the rest of the Technical Centre's area of authority.

For Lafarge in Greece, the program contributes to the achievement of better performance, improved operating mindset, a structured and harmonized approach to kiln control and maintenance specific inspection, better process stability, and a climate in which operators, inspectors and supervisors can better exchange feedback on their performance as a team.

assignments

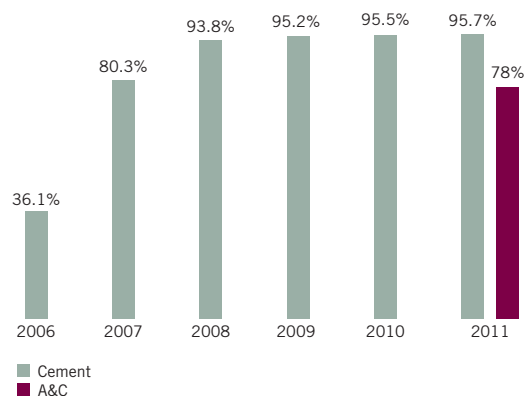
BOOST PROGRAM

**BOOST is a Lafarge program in which teams of professionals with the required skills and knowledge transfer expertise are assembled and mobilized to work at Lafarge plants which require particular attention to meet the Group's objectives. To become a member of a BOOST team, candidates must volunteer, gain their business unit's approval and then be subject to an assessment process which takes account of technical knowledge, managerial skills, coaching skills, ability to work in different cultures, and safety awareness. This assessment is a shared responsibility between the Lafarge Technical Centre, the business unit management and the HR department.**

**In 2011, volunteering by Lafarge employees in Greece had given rise to eight BOOST potential team members; by the end of the year one had completed a 3-month assignment in Indonesia and another has since gone (also to Indonesia) for 6 months.**

Reviewing performance

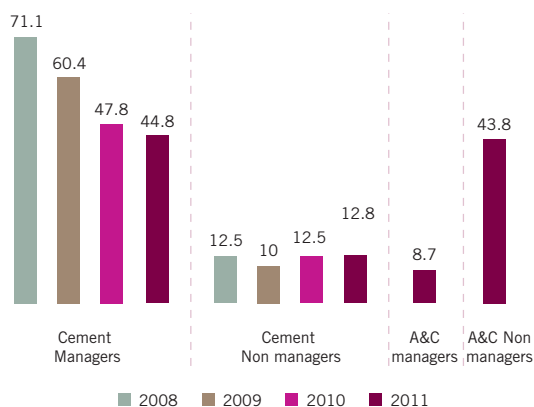
(Percentage of managers receiving performance appraisals)



The percentage in the cement business remains high; we aim for 100%.

Investing in a skilled workforce

(Average hours training per person per year)



The age structure of our workforce

(Number of people in each age category)

Age range	2008	2009	2010	2011 Cement	2011 A&C
<30	165	143	128	95	23
31 - 50	930	820	734	675	153
>51	619	568	422	464	31
<b>Total</b>	<b>1,714</b>	<b>1,531</b>	<b>1,284</b>	<b>1,234</b>	<b>207</b>

The age profile of our workforce is still weighted towards the middle and upper segments. The data for cement excludes impatriates and seamen and therefore the total is not exactly the same as number of employees in the graph shown on page 21.

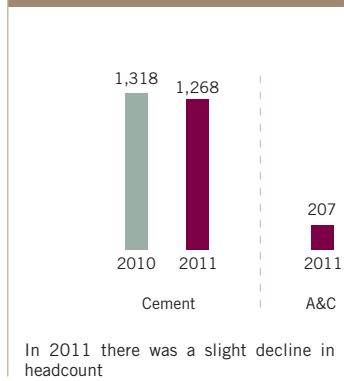
## Job evolution

(Number of jobs created and lost)

	2008	2009	2010	2011 Cement	2011 A&C
Hirings	44	28	34	8	14
Acquisition					4
<b>Total</b>	<b>44</b>	<b>28</b>	<b>34</b>	<b>8</b>	<b>18</b>
Resignations	9	10	4	7	2
Retirements	27	7	10	1	5
Early retirements	255	191	272	48	65
Deaths	2	3	2	1	0
<b>Total</b>	<b>293</b>	<b>211</b>	<b>288</b>	<b>57</b>	<b>72</b>

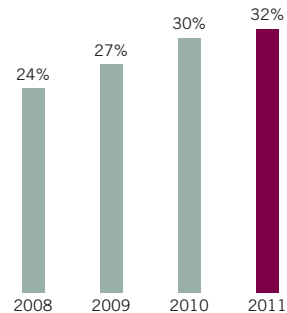
Early retirement remains the main source of change in the workforce.

### Number of employees



### Women in management

(Percentage of female managers in Hay grades 18+)



## Women in the workforce

(Women in different categories of employment)

	2008	2009	2010	2011 Cement	2011 A&C
Number of women (Hay Grades 12 & above)	50	53	49	48	16
Number of women (Hay Grades 11 & below)	118	106	93	90	23
<b>Total</b>	<b>168</b>	<b>159</b>	<b>142</b>	<b>138</b>	<b>39</b>
<b>Total headcount</b>	<b>1,759</b>	<b>1,573</b>	<b>1,318</b>	<b>1,268</b>	<b>207</b>
<b>%</b>	<b>9.55</b>	<b>10.11</b>	<b>10.77</b>	<b>10.88</b>	<b>18.84</b>

There has been overall decrease in the absolute number of women employed in the cement business but as a proportion of the workforce women are better represented than in previous years.

# Stakeholders and communities

Engaging with stakeholders and contributing to the communities where we operate is key to our corporate citizenship. Local stakeholder consultation committees are now integrated into our operations. Focusing on the topics where we can be most effective, we have continued local development projects with the local community and initiated new ones.

## Stakeholders

Those who have an interest in our business and may be affected by our decisions include individuals, groups and organizations. They may be employees or customers, suppliers or contractors; they may be shareholders or regulators who have legal authority over our operations; the NGOs and civil society organizations that take an interest in our social and environmental performance, as well as the media.

One particularly important category of stakeholder is the members of the communities around our production and distribution sites.

## Effective engagement

To have effective and productive relationships with our stakeholders, we try to follow a structured approach as illustrated by the diagram on page 23. There are three main components: identifying the range and interests of our stakeholders, providing the right materials and events (including consultation committees, open days and information) and ensuring that there is a suitable process for handling and responding to their comments or their complaints.

## Local stakeholder consultation committees

We believe our sites are best situated to understand local contexts and challenges and take the appropriate engagement actions. Therefore, local consultation committees remain the main pillar of our engagement at local level. Following the first meeting at Milaki in 2010, we have held two more meetings there in 2011 and also extended the process to the Volos plant with two meetings. These meetings give us the opportunity to listen to our stakeholders, learn from their feedback, respond to their expectations and proceed with actions that are based on common interest and understanding. Committees are run under the framework principles agreed in 2010 covering such matters as number and type of meetings, process for inclusion of different topics and choice of participants. (See 2010 Sustainability Report for details.)

We are pleased at the continuing success of the committees and hope that continuing practical experience of them will improve the quality and the depth of the discussions that take place. Other means of exchanging information and views, e.g. publishing this report and inviting comments on it, hosting a website and holding open days, will also continue.

## Local communities – our role

Local communities are a very special category of stakeholder, not least because they are where our employees and many of our customers and supplier live, and because our operations tend to have a significant influence on the communities where they are based. This is especially when, as is often the case, our operation is in a remote area where its contribution to the local community is particularly important.

We maintain the view that to be a constructive influence, we should be focused. So we continue to concentrate our efforts on the three chosen topics: health and safety, education and the environment, and local infrastructure.

Alongside these community contributions, employment and secondary business activity generated by our operations and the payment of license fees also form a significant part of our socio-economic footprint.

# consultation

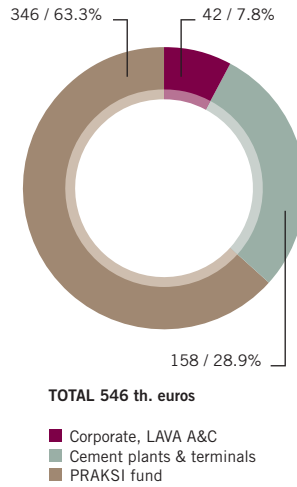
## LOCAL CONSULTATION COMMITTEES - MAIN TOPICS IN 2011

- ...cement manufacturing process and impacts during the production stage
- ...how the monitoring of emissions and of compliance with limits is done
- ...the socio-economic impact of the plant
- ...corporate social policy
- ...the strategy and priorities of the plant
- ...the management of quarries and their impact on biodiversity
- ...water management

The above were topics proposed by the communities for discussion and presented in detail by the plant management teams.

## Community investment

(Source of support, in thousands of Euros, 2011)



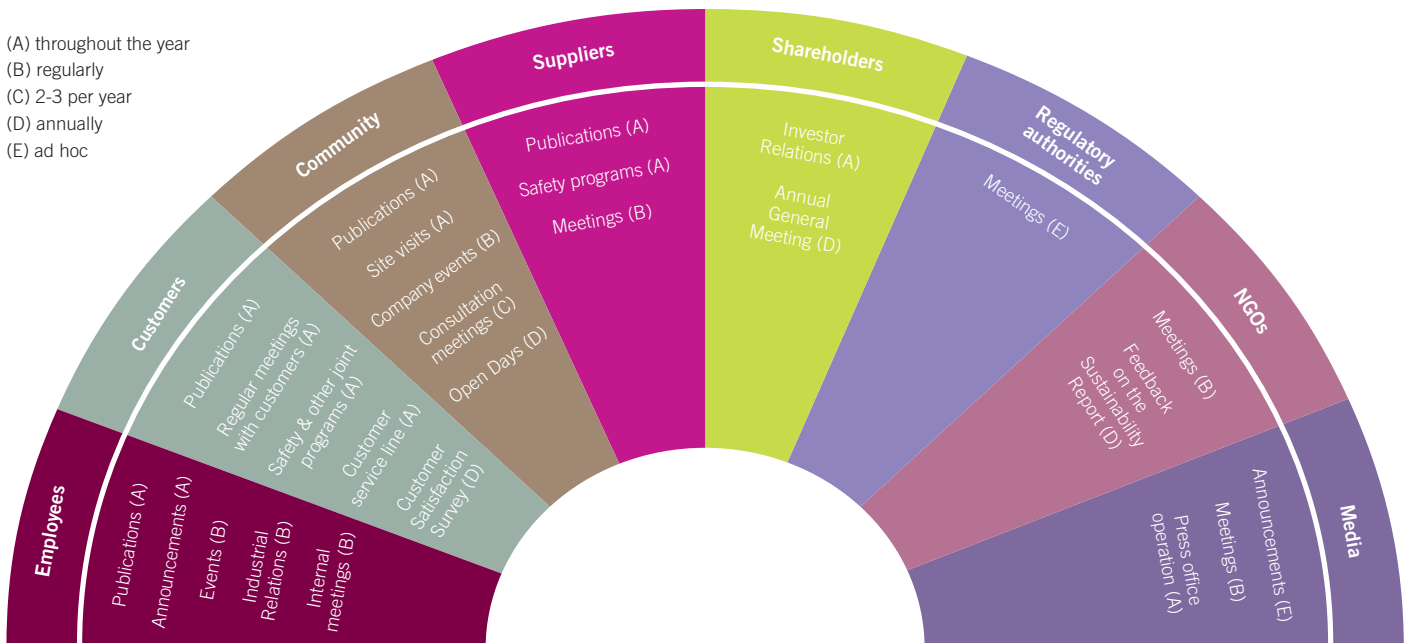
## Socioeconomic impact of our business

(Contributions to the economy, in millions of Euros, 2011)

	Halkis	Milaki	Volos	LAVA
Salaries / household income	19.20	14.15	22.27	1.45
Local license fees & taxes	0.36	0.27	1.65	0.62
Suppliers & subcontractors	6.38	6.62	11.16	1.12
Materials supply (i.e. from quarries)	3.36	4.03	4.77	not applicable
Community contributions (monetary & product) incl. PRAKSI	0.21	0.20	0.25	0.02
	<b>29.51</b>	<b>25.26</b>	<b>40.10</b>	<b>3.2</b>

## STAKEHOLDER IDENTIFICATION - Frequency and Type

- (A) throughout the year
- (B) regularly
- (C) 2-3 per year
- (D) annually
- (E) ad hoc



**cultural legacy**



**THE HERACLES COLLECTION AT BENAKI MUSEUM**

We were greatly pleased that, in 2011, we developed a partnership with the Benaki museum, for the hosting of the Heracles collection of works of art. The collection will remain for the next 19 years in the Benaki Museum, accessible to the general public through permanent or periodic exhibits. It comprises 1,475 works of art by more than 60 Greek artists, which illustrated the company's annual calendars from 1956 to 2010. It is therefore a distinct element in the cultural heritage of Greece.

The decision to grant the collection to the museum marked 100 years since the company's founding and 10 years with Lafarge. It was the subject of a special exhibition which ran from October to December, and was then extended to January 2011. The museum will now be organizing further thematic exhibitions, on an annual basis.

**safe access to schools**



**SAFETY INFRASTRUCTURE FOR SCHOOLS NEAR HALKIS**

The 2010 Sustainability Report described the road safety program that we have been running in Halkis, where our Halkis cement plant is located, in conjunction with local organizations. In 2011 we installed the new safety infrastructure which has been selected in the course of the program. This infrastructure includes improved safety signage, guardrails, new sidewalks and pedestrian walkways, lighting, planting and sound reflectors. It has been installed in the vicinity of seven different schools in the area, with the entire expenditure requirement (more than €100,000) being met by our PRAKSI fund.

The combined efforts of the traffic police, local authorities and organizations such as our own are delivering results. Local traffic police estimate that there has been a 30% reduction in road accidents during the period since the program began, which is a very encouraging indication for this area in particular, where the exceptionally high road accident rate has been a very big community concern

**safety awareness**



**ENCOURAGING SAFER DRIVING ON MILOS**

In the autumn of 2011, 130 students at the Milos High School took part in a two-day road safety program organized by LAVA in cooperation with the municipality of Milos and the "Panos Mylonas" Road Safety Institute. There was a professional presentation, interactive games to illustrate the effects of distraction on perception skills, questionnaires and discussion. The students also rode bicycles in a special driver-training park and drove a small remote-controlled car with low lighting to appreciate the importance of lighting as a road safety factor.



# Climate change

CO<sub>2</sub> emissions is a material issue for cement. We tackle climate change by making our processes more energy efficient and developing lower-CO<sub>2</sub> products. Alternative fuels offer potential but require support from local authorities and communities.

## Cement and climate change

To understand our strategy it is important to note that CO<sub>2</sub> is emitted from limestone when it is thermally processed to make clinker (the raw material for cement) and from fossil fuels used to fuel that process. Hence we can reduce emissions per unit of production by optimizing the process, by substituting for fossil fuels with alternatives and by substituting for clinker with lower-CO<sub>2</sub> materials.

## Optimization

The Volos plant was the main focus in 2011. It was subject to the "Plant Operating Model" program that had been very successful at the Milaki plant previously (see 2010 sustainability report). The program included the work with Control Room Operators described on page 19 and resulted in high reliability and low energy consumption per unit of production. The Milaki plant is rated as among the best-managed plants in Lafarge worldwide.

## Replacing fossil fuels

Initiatives in previous years to use agricultural biomass and paper waste in place of fossil fuels (at the Volos and Milaki plants respectively) have brought our use of alternative fuels to a level of 2%. This is not as high as it could or should be. The continuing financial crisis is affecting the availability of paper sludge. But, more importantly, we are deeply concerned that our application to start using solid shredded waste (SSW) as a fuel source at the Milaki plant was delayed by administrative barriers. Building permission has since been granted (in June 2012); we will continue with our efforts to build awareness and understanding amongst stakeholders of the merits of this type of development.



## INNOVATION IN GRINDING REDUCES ENVIRONMENTAL FOOTPRINT

A large-scale pioneering work of industrial innovation was completed in 2011 in Halkis; it was a first for Lafarge and unique in Greece. Its purpose was the optimization of the manufacturing process for cement types commonly used in the Greek market, leading to a reduced environmental footprint. This has been achieved by grinding clinker and additives separately, and then mixing them with the base cement in a second phase during which the final product is defined.

All composite cements of Halkis are now produced by separate grinding. The initiative has been a very significant success in terms of combating climate change. Average clinker content has been reduced by 7% which means a reduction in CO<sub>2</sub> emissions of over 10%. In addition, we are able to be very flexible and competitive in our response to customer's requests for cements of different types for different purposes, which is especially important in the current economic climate.

innovation

### Alternative materials

As of the end of 2011, the range of alternative materials that we were using to reduce our and our customer's carbon footprint included fly ash, metallurgical slag and natural pozzolanic materials, plus other additives that reduce emissions in cement manufacture. Usage was 14.5% (and about three-quarters of this was recovered materials) compared to 10.2% in 2010; given the impact of the financial crisis on production levels in industry, this is a satisfactory outcome.

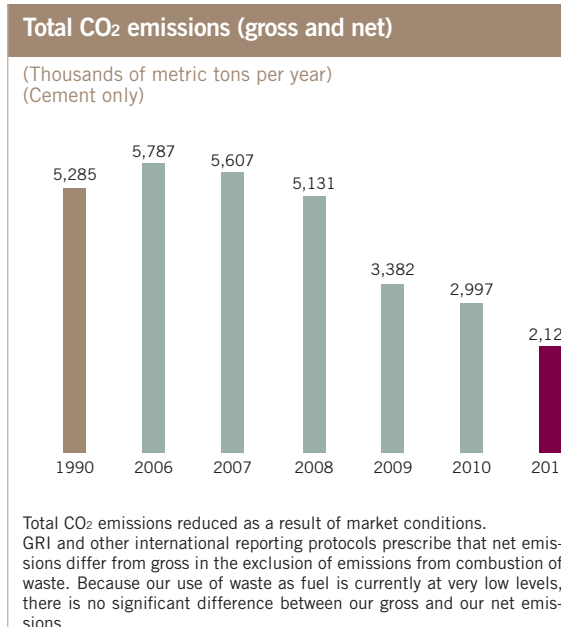
### Results – CO<sub>2</sub> emissions

Total emissions in 2011 were lower than the previous year but it is emissions relative to the volume of production that are our main focus. Here, regrettably, we have again been unable to return to the low level achieved in 2009 and our results for 2011, a 7.4% reduction from 1990, represent underperformance in relation to our target (an 11% reduction).

The explanation lies in the balance of domestic and export sales. In 2011, as in 2010 but to an even greater extent, domestic sales declined and the demand for lower-CO<sub>2</sub> products declined within that market. We were therefore obliged to rely more heavily on exports which are dominated by clinker and clinker-based, high CO<sub>2</sub> products. This market-dependent effect has outweighed the benefits of improved operational performance, which has reduced energy consumption per unit of cement produced by 2% compared to 2010.

### A&C and climate change

In our aggregates and concrete business, the main contributions to climate change are use of diesel on-site and off-site and, in the concrete business only, indirect energy consumption due to use of electricity.



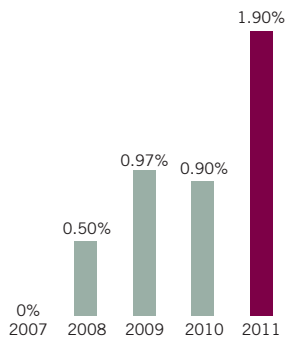
### Indirect energy consumption

(Consumption of electricity, thousands of kilowatt-hours)

	2007	2008	2009	2010	2011 Cement	2011 A&C
Electricity	858,575	877,108	579,652	488,222	347,214	5,489

### Alternative fuels

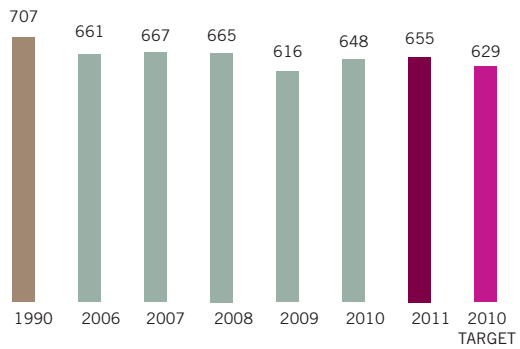
(Consumption of alternative fuels as % of thermal consumption)  
(Cement only)



Use of alternative fuels currently comprises biomass and paper sludge and is not at a significant level but it has increased in 2011, mostly at the Volos plant. We still aim to use solid shredded waste (see text).

### CO<sub>2</sub> emissions per unit of product (gross and net)

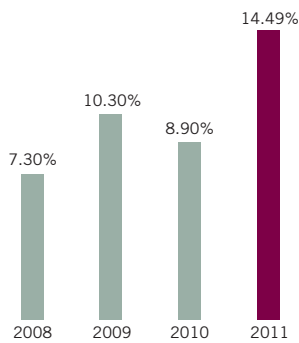
(Kilograms per metric ton of cement)  
(Cement only)



Emissions per unit of cement produced increased in 2011 due to change in customer demand and the balance between domestic and export sales. Again, there is no significant difference between our gross and our net emissions.

### Alternative raw materials

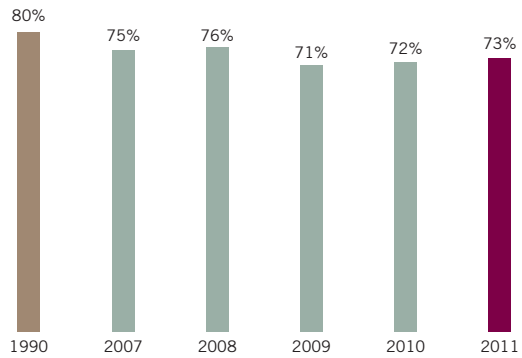
(Consumption of alternative materials as % of total raw materials consumed for cement and clinker production)  
(Cement only)



Usage has increased in 2011 despite the impact of the recession on other industries from which some such materials are sourced.

### Clinker factor

(Ratio between clinker consumption and cement production)  
(Cement only)



The effect of improvements that have been achieved in recent years is not visible due to changes in customer demand and the balance between domestic and export sales.

# Emissions

Meeting our emissions target is essential and has continued in 2011. Further improvements have been driven by Lafarge global standards and by our own drive for improvement.

## Air quality challenges

In addition to the challenge of reducing greenhouse gas emissions (see page 25) the manufacture of cement requires that we address the following emissions from the stack: dust, nitrogen oxides (NOx) and sulfur dioxide (SO<sub>2</sub>). The presence of the latter depends on the raw materials used in manufacture. Another challenge to be addressed, given that stack dust emission reduction has been so successful, is fugitive dust emissions; these result from raw materials storage, materials conveying and internal transport.

## Key results

There was a satisfactory result last year in respect of NOx emissions; these continued to decline and are now below our target level. These results reflect changes to the Milaki plant described in last year's sustainability report and, more recently, a new practice piloted at the Halkis plant.

SO<sub>2</sub> emissions remain well below legal limits and below our own reduction target; however there was again a small increase in 2011 due to increased demand from the Milaki plant whose natural raw material supply contains more sulfur.

Stack dust emissions remain well below our own target level and are very much lower than the levels prescribed in our environmental permits. We regard improvement in control of fugitive dust sources as of greater note and work completed at Volos for this purpose is described on the right.

A program of dust emission measurement began at three of our distribution centers (encompassing silos and bagging and palletizing facilities) and noise measurements took place at all six of them.

## Persistent pollutants

We have continued to contribute to the 10-year program of work agreed between Lafarge and the WWF to understand and reduce emissions of persistent pollutants. A major step forward in 2011 was improvement in the quality of data collected for this purpose, following the measurement protocol introduced in Lafarge at the beginning of the year.



## VOLOS - A PROJECT COMPLETED

May 2011 marked the completion of our major project to address the challenge of fugitive dust from the Volos plant. Conceived in 2009, and following action to address stack dust emissions, this was a major project to cover all stockpiles of the cement additives used at the plant and to reduce the need to transport these materials to the cement mills using trucks and loaders.

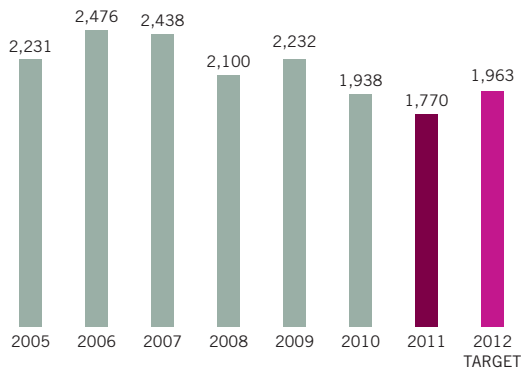
The project has been very successful. Fugitive dust emissions from the stockpiles are almost entirely eliminated; these emissions are estimated to be reduced by 100 metric tons per year. Because trucks and loaders are no longer used, noise has been reduced and our people no longer have to work outside in all weathers.

All these benefits are good for the business. But as importantly, there has been a marked reduction in the nuisance caused, as reported by neighboring homeowners and businesses. This investment amounted 11 million euros in total.

fugitive dust

### NOx emissions

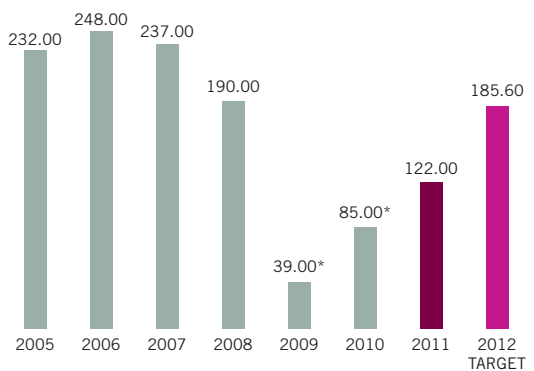
(Grams/metric ton clinker)  
(Cement)



Total emissions of NOx were 4,453 metric tons in 2011 (6,799 in 2010). Emissions of NOx are now lower than the target level.

### SO2 Emissions

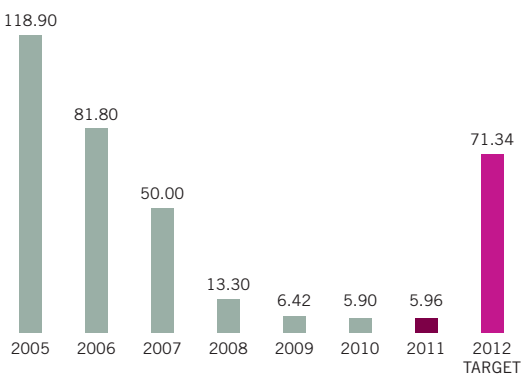
(Grams/metric ton clinker)  
(Cement)



\*data revised since publication of the 2010 report  
Emissions of SO2 are below the target level although they have increased since 2009. This is largely due to greater use of the Milaki plant in 2011. Total emissions of SO2 were 308 metric tons in 2011 (298 in 2010).

### Stack dust emissions

(Grams/metric ton clinker)  
(Cement)



Total stack dust emissions were 15.0 metric tons in 2011 (20.7 in 2010). Stack dust emissions are significantly lower than the target level.

# Biodiversity

Screening and rehabilitation work in accordance with the Lafarge Group standard has continued. We are also beginning to see the benefits of our partnership with a major Greek university, which will help us to enhance biodiversity in the Volos area. Our aggregates business has also continued to operate its sites, some in highly sensitive locations, with appropriate attention to biodiversity.

## Meeting Lafarge group standards

The Lafarge global partnership with the Worldwide Fund for Nature (WWF) sets standards for the biodiversity screening of all sites (to establish their biodiversity potential) and defines a methodology for the assessment of those sites that are in sensitive areas. In 2011 all quarries in Greece were mapped and screened to confirm locations that are within or close to internationally protected areas using IBAT (Integrated Biodiversity Assessment Tool). This is a new tool developed to support the screening program begun in previous years. We also continued to implement the rehabilitation action plans that were devised in 2009 and 2010.

## Biodiversity enhancement program

Our partnership with the University of Thessaly, which is centered on two quarries in the vicinity of the Volos plant but informs our wider work on biodiversity, began operating in 2011. Preliminary results were available by the winter (see box on the right) and already provide many benefits to us, our stakeholders and biodiversity in our surroundings. The scientific findings have been incorporated into the existing rehabilitation plan of Anavra, an active quarry, and are informing us as we plan the redevelopment of Agria, an inactive quarry. The aims of the program and preliminary findings have been presented at the 10th Volos Panorama, a major local forum which attracted 45,000 visitors. Access to evidence-based information about the biodiversity status of the sites is also improving the quality of the dialogue we are having with stakeholders, including schools, interest groups and local communities.

## Biodiversity and aggregates

Our aggregates business has considerable expertise in biodiversity management and this expertise will strengthen and enhance our other quarry operations.

In addition to the project centered on Araxos (see box on page 31) the aggregates business operates the Polycastro hard rock quarry which is located within the European-designated Special Protection Area of the Axios-Loudias-Aliakmonas deltas. A study commissioned by the company in 2010 had confirmed that the impacts of its operations on bird populations were insignificant but nevertheless the business remains alert to the sensitivity of its surroundings and the need for careful site management.



study

### FINDINGS FROM THE UNIVERSITY OF THESSALY

Animal diversity is higher at Agria quarry than at Anavra, which is consistent with the fact that the former has a longer history of rehabilitation. For instance, the numbers of mammal and bird species recorded at each site are 5 and 32 (Agria) and 2 and 20 (Anavra). The majority of bird species are resident and Agria has significant numbers of breeding pairs of some species. The bird population at Agria also includes the following birds of prey: Short-toed Snake Eagle, the Buzzard, the Sparrow hawk and the Lesser Kestrel, the latter two as breeding species.



Its limestone quarry on the island of Syros is not specifically-designated at international level but was nevertheless in 2011 the subject of a special study commissioned by the company to the University of Patras to revise and improve the existing rehabilitation plan. Now implemented, the site has been replanted with more than one thousand plants of endemic species.



## awareness

### INSPIRING THE NEXT GENERATION

The biodiversity of Nisiros and Yali islands has special characteristics and LAVA, who operates a pumice quarry on the island, wanted local children to be aware of this and to be inspired by the environmental value of their surroundings. They organized for a professional environmental biologist from the Goulandri Museum of Natural History to take part in a special education information event in which children were given a presentation, taken on a tour of exemplary habitats on Nisiros and took part in an educational game for "junior ecologists".



## protection

### PROTECTING A RARITY AT ARAXOS

*Centaurea neideri* is a rare Greek endemic plant, subject to special protection under the EC Habitats Directive and the Bern Convention. It is found in the area where our aggregates business operates its Araxos aggregates quarry. Since 2010, our aggregates business has been engaged in a partnership with the National Botanical Conservatory Of Brest and the Botanical Institute of the University of Patras to safeguard the future of this species. First, there was a program of seed collection from the very limited areas where the plant is found. Seed treatment, propagation and growing-on took place at the University; the young plants were then trans-



planted to prepared sites at the quarry where they could be acclimatized. In spring 2011, more than one thousand plants were established in specially-located areas within the quarry where they will form dissemination centers; they were irrigated and tended throughout the growing season. The success rate was more than 70% which is highly satisfactory for a project of this nature.

The planted areas remain subject to special attention and monitoring, which will continue under the terms of the partnership, with a particular focus on the effects of competing species and the capacity of the plant to colonize additional areas.

#### Progress with rehabilitation

(Area affected and rehabilitated, in thousand m<sup>2</sup>)

	Total area	Already Rehabilitated	Rehabilitated in 2011	Mined
Halkis	1,150	160	106	386
Milaki	1,940	340	30	930
Volos	2,906	1,270	30	795
Lava quarries*	1,656	240	0	1,214
A&C	2,402	42	0	2,053
<b>Total</b>	<b>10,054</b>	<b>2,052</b>	<b>166</b>	<b>5,378</b>

\* Milos, Yali and Altsi

#### Progress with planting

(Number of trees and other plants planted per year)

	2007	2008	2009	2010	2011
Halkis	750	3,400	2,500	1,000	2,145
Milaki	2,700	2,300	2,000	2,200	2,000
Volos	23,925	20,110	17,350	25,000	15,200
Lava quarries*	6,550	7,365	1,500	0	5,300
A&C					1,600**
<b>TOTAL</b>	<b>27,375</b>	<b>25,810</b>	<b>21,850</b>	<b>28,200</b>	<b>26,245</b>

\* Milos, Yali and Altsi

\*\* Trees planted at Syros and Araxos in already rehabilitated areas in accordance with the Biodiversity Action Plan and at Avileri in an area outside the mined area.

Establishing trees and other plants is one part of our rehabilitation program. The high number of plants used at Volos is due to the number of quarries to rehabilitate and the different requirements of the rehabilitation plan.

#### Rehabilitation

(Number of quarries, 2011)

	Cement and LAVA	Aggregates
Quarries with a rehabilitation plan compliant with Lafarge standards	14	9
Quarries screened for biodiversity	14	9
Quarries with high biodiversity	3	4
Biodiversity Management Plan Programs for high biodiversity sensitive quarries	0	2

Data refers to active quarries only. The program of screening and rehabilitation planning is consistent with the objectives agreed in Lafarge's partnership with WWF.

# Water

The concern about water as a global resource has continued to grow. We are using water footprinting and improving our infrastructure to enhance our own water management. This in turn reduces our use of this precious, shared resource.

## Global water issues

The Rio+20 summit has confirmed how important the sustainable management of water is to us all. Cement manufacture is not a major water-using activity but careful operation of our facilities can still help ensure water is best-managed at local and regional level.

## Progress in 2011

We have reduced our reliance on groundwater (from c. 90% to 75%) because the Milaki desalination unit means we no longer import water abstracted from the aquifers of other regions. Meanwhile the latest results (autumn 2011) of the Hellenic Marine Institute's study have confirmed that the unit continues to have no significant impacts on sea water properties or marine life. We have also completed the installation of the new rainwater drainage system at our Halkis plant which is improving the quality of water returned back to the environment. Our consumption of water has decreased by nearly 15%; this reflects lower production and our efforts to conserve water.

## Water use in the aggregates and concrete business

Water used in the aggregates business is limited to that required for fugitive dust suppression and restoration work. Concrete production, which is supplied by ground water and the public network, is a more significant user of water; the finished product is 15% water (by weight) and the process water is mostly treated and re-used (see below). Consequently, there is no water discharged.

## recycling

### "PERPETUAL RECYCLING" OF WATER IN READY-MIX PLANTS

In ready-mix plants, wastewater is produced when the mixer, mixer cabin, trucks and truck loading area are washed. It is non-toxic and free of microbial and organic compounds, but contains suspended solids.

In our business, at several plants, we use a three-stage sedimentation treatment system to capture water from truck washing and loading, remove the suspended solids and produce an effluent of quality suitable to be returned to the washing stage and used again. The solid residue from the system is disposed of at appropriately licensed sites.

## water footprint

### UNDERSTANDING WATER USE IN OUR BUSINESS

Ground water meets most of our needs – for instance, cooling cement plants, suppressing dust and watering vegetation. Our abstraction of groundwater is governed by permits.

Treated water can come from the municipal supply or – in the case of the Milaki plant – from the desalination unit we commissioned in late 2010 (see 2010 sustainability report).

Our use of surface water, other than that via the municipal supply and the seawater for desalination, is limited to potable water and hygiene facilities at some sites.

"Water consumption" is the difference between what is abstracted and what is discharged back to the environment; it includes water loss by evaporation (especially after stack dust suppression), fugitive dust suppression and watering.

Techniques that reduce our need for water in the first place and maximize its return to the environment include closed systems for cooling (in use at all our plants), use of settling ponds and oil traps to treat water before discharge, replacement of electrostatic precipitators with hybrid filters with lower water requirements for gas cooling, and use of treated water that would otherwise be discharged, for dust suppression and watering (Milaki).



# training



## WATER FOOTPRINT - WORKSHOP

For more than three years now, water footprint reduction has been one of the priorities enshrined in the Lafarge partnership with WWF. The Milaki plant has already been one of the sites chosen to pilot the water footprint methodology under the terms of that partnership; the next stage was to get a wider understanding of the methodology and to raise awareness of integrated water management. This was the objective of a workshop held in the summer of 2011 in cooperation with the Greek office of WWF.

A select group of 15 managers were brought together with the WWF's Water Management Coordinator for Greece and the Heracles sustainability manager in a half-day session which covered:

- Management of water resources
  - Lafarge Greece water footprint
  - Lafarge Greece water management
  - Action plans and next steps
- This event has increased our capacity in water-footprinting, and gives us a good basis for planning and evaluating the next steps that will help us to reduce our water footprint.

# symbiosis

## INDUSTRIAL SYMBIOSIS AT VOLOS

In 2011 we and the operators of a soft drinks factory devised, designed and got regulatory approval for a scheme by which treated water from the factory can be piped to the Volos plant (along a 700m dedicated pipeline) and used as cooling water. The scheme is due to start during 2012 at which point we will be using 30,000 m<sup>3</sup> per year less groundwater. This initiative is an example of industrial symbiosis; we save on our use of groundwater and the factory ceases to discharge the same amount to the sea.

### Water withdrawn by source

(thousand m<sup>3</sup> per year)

From	2011 Cement	2011 A&C
Groundwater	2,494	198
Surface water	776	0
Other	54	42
Total	3,324	240

75% of the water we use is abstracted from groundwater sources under licence. Surface water includes seawater and the amount withdrawn has increased since the Milaki desalination plant began operation in late 2010.

### Water discharged

(thousand m<sup>3</sup> per year)

From	2011 Cement	2011 A&C
Groundwater	0	0
Surface water	2,456	0
Total	2,456	0

The water discharged comes mainly from the brackish water well in Volos plant, pumped for safety reasons and directly discharged. Water is passed through settling ponds and oil separation traps before discharge. We no longer discharge to groundwater.

### Water balance

(thousand m<sup>3</sup> per year)

From	2011 Cement	2011 A&C
Withdrawn	3,324	240
Discharged	2,456	0
Consumed	861	240

Minor discrepancies in this data arise because water withdrawn and consumed are measured while water discharged is only estimated.

# Materials and Waste

Careful use of mineral resources is key to the sustainability of our industry. Our actions include resource recovery and material substitution, alongside careful waste management.

## Principles

Like all industries, we must adhere to regulatory standards governing waste management and disposal. We do this while following the principles of the waste hierarchy: waste should be minimized, that which arises should be reused, recycled or used to generate energy; remaining waste should be safely disposed of to landfill. "Industrial ecology" is a broader principle which also underpins our work.

## Understanding "Industrial ecology"

The sustainability of ecosystems comes from their equilibrium: materials and resources are constantly recycled. Industrial ecology applies this principle to human activity, making the most efficient use possible of by products and waste.

## Progress in 2011

We ran a "Clean and Tidy" campaign at all our cement sites. This was targeted at employees, contractors and others; we aimed to raise awareness of best-practice in waste handling and demonstrate how a clean and tidy site benefits everyone.

The campaign was in addition to our regular activities: housekeeping audits of all sites including LAVA quarries, the auditing of contractors for "duty of care" and the use of waste segregation facilities everywhere (including the head office).

The recycling rate for all the waste we produce remained high (94%) and not significantly different from 2010 (96%).

## Alternative materials and fuels

Use of alternative materials and fuels in cement manufacture is an example of industrial ecology. Examples and progress are described in the climate change section and we apply the concept when working with customers to develop new products (see pages 26 and 36 respectively). The synergistic use of water at Volos (see page 33) is another example of industrial ecology.

## Waste management in aggregates and concrete

Waste arisings in the aggregates business are minimal, consisting only of very small amounts of oil and spare parts resulting from maintenance. The principal source of waste in the concrete business is concrete waste produced when concrete in excess of the customer's requirements is returned and from the washing of delivery trucks and pumps. The usual method of disposal is to a suitable-licensed site but other options are now being explored. (See example on the right).



RECYCLING UNIT AT HALKIS

A new waste recycling unit began operating in pilot mode at the Halkis plant in summer 2011. The plant can handle waste from the demolition, excavation and construction activities of private or public bodies. It produces various graded, recycled aggregate products that can then be sold or used in cement production or quarry rehabilitation.

The unit gives us another means of conserving raw materials and, when the recycled material is returned to the customer from whose project it came in the first place, we are really "closing the loop".

The unit will be operating at full capacity by summer of 2012.

demolition waste

## saving resources

### FLY ASH SUBSTITUTES FOR CLAY AT VOLOS

Dry fly ash is being used instead of naturally-derived clay to manufacture cement at the Volos plant. This follows a program of evaluation, and permitting, logistic and infrastructure preparations completed in 2011. The benefits are many. Clay resources will be conserved and the working life of the quarry extended. Energy consumption at the plant will be reduced because the dry fly ash has its own calorific content and is easier to grind; this plus the reduction in calcination (a major source of CO<sub>2</sub>) will reduce emissions of greenhouse gases. The current rate of substitution represents a 2% reduction in total CO<sub>2</sub> emissions from the Volos plant. The transport of clay through Volos and the need to dispose of dry fly ash will both be reduced. Quality will be improved and there will be financial benefits as well.



## concrete recycling

### THESSALONIKA -CONCRETE RECYCLING

Concrete waste contain concrete left-overs, possibly including small quantities of admixtures and additives such as metallic/plastic fibers, polystyrene, pigments, bentonite, cementitious materials etc. The Neochorouda and Lakkia concrete sites in Thessalonika had accumulated nearly 10,000 metric tons of concrete waste over a period of several years and the team there decided that something better than disposal could be done. Borrowing equipment from the neighboring Polycastro quarry, they crushed, screened and sieved the waste to produce an "all-in" aggregate (0-16mm size) and gravel (16-32mm) in quantities of 6,750 and 3,010 metric tons respectively. This was a six week operation. Both types of product are suitable for use in the manufacture of fill concrete, replacing the gravel and (in part) fine gravel and sand fractions. The success of this exercise – both in providing a solution and conserving virgin resources – is such that it could be replicated elsewhere in the business.

## optimizing

### "THINK BEFORE YOU INK"

This is the Lafarge printing optimization policy and we have now completed its implementation; we covered the head office in 2010 and all plants in 2011. We have reduced the quantity and type of printers in use (from 250 to 53 and from 59 to 3 respectively) and all printers are now networked. The use of personal printers is prohibited (except in the case of disability) and for all printers the default mode is "double-sided" and "economical/draft". With this policy and the associated new equipment, there will be no emissions of radiation or ozone and consumption of electricity will be reduced by 80%. Paper and ink consumption will also be reduced by 20% and 30% respectively. The business benefits are also significant; costs will be greatly reduced and time will be saved as a result of reduced administration and improved integration.

## Waste recycling and disposal

(Waste by type and by disposal method, metric tons per year)

Age range	2009 Cement	2010 Cement	2011 Cement	2011 A&C
Hazardous (oils, grease) - recycled	123	156	75	0
Hazardous (contaminated rags etc) - disposed	150	123	15	0
Non hazardous - recycled	3,359	2,692	3,059	0
Non hazardous - disposed	0	0	176	36,533*
<b>Total</b>	<b>3,632</b>	<b>2,971</b>	<b>3,325</b>	<b>36,533</b>

\* Solid waste from settling basins.

Hazardous waste is recycled at specialized treatment facilities. No waste is incinerated. More non-hazardous waste was recycled and disposed of in 2011 because of the Clean and Tidy campaign (see page 17) and because temporary waste storage at sites is being better managed.

# Customers

Our business is shaped by the needs of our customers. In 2011 we enhanced the choices that we offer our customers to ensure we meet those needs in difficult economic circumstances. These enhancements are also part of our transition to a single country organization. We continued to engage with customers to improve safety for their and our people in the course of our work.

## Products – for the future

We know that to thrive in the future, in circumstances which will be very different from those we have inherited, we must be more focused on the end-user of our products; cement is no longer just a commodity business.

To complete our bagged products range of grey (Athlos, Basis) and white cements, "HERACLES™ IV32.5R" grey in 25 and 50kg bags was launched in 2011 as a cement for general applications. This was welcomed and achieved high market penetration.

At the same time, householders in Greece face difficult economic circumstances and the DIY market, though small at present, is set to grow. Adapting to the needs of this market has been challenging for us, despite the small scale. Developing the right product required us to address customers' needs such as size of bag, ease of handling, etc. and retailers' requirements for bar-coding and in-store handling. Our packaging is also a differentiating factor in this market; the paper packaging we have chosen is recyclable and sourced from sustainable forests.

## Closer to our customers

We continued to host customer visits to our sites during the year; such visits are an opportunity on both sides to exchange views and they complement the information that we obtained through our 2011 market survey of ready-mix customers.



### HERACLES™ IV32.5R IN SMALL BAGS

- practical and economical 5kg bags
- "smart" opening and a carrying handle
- Forest Stewardship Council-certified paper and fully recyclable packaging
- suitable for all applications
- available from our distribution centers, building material retailers and hardware shops.

DIY market

## customer safety



### CUSTOMER SITE SAFETY PROGRAM

An audit of customers' sites in 2010 had revealed safety risks. The customer site safety program was initiated in response to this and included inspections of approximately 800 of our customers' worksites and 1200 bulk cement silos. Inspection results were augmented with checklists of site safety conditions completed by truck drivers. Sites presenting a high level of risk were isolated and subject to visits by Lafarge safety teams to implement corrective actions. In such cases there was close collaboration with the relevant customers, not least to ensure that the legal risks they were taking were eliminated. For all other sites, there was communication between our sales teams and our customers, both before and during the program; we also issued a special brochure about the program and for some customers, we held an introductory meeting at the Volos plant. As a result of this program, already, 40 sites have been subject to corrective actions and safety risks are much reduced. The program continues with ongoing use of the unsafe site report system that we have created. We are proud to have been able to engage our H&S staff with our customers and believe we have made a real difference as a result.

## securing cargo



### CARGO SECURING SAFETY PROGRAM

This program, which is part of our Road Safety Roadmap, was launched because we were concerned about methods of securing cargo on vehicles. Bagged cement represents nearly 30% of our sales and is almost always picked-up by customers; we could see that poor practice and lack of appropriate regulation posed risks to them, to our own people, and to professional and third party drivers. In late 2010 we commissioned a study to compare practice in Greece with the relevant European regulation and best practice. Then, we announced basic cargo securing rules, shared them with all relevant parties and put them into effect three months later. The rules specify minimum standards for the loading and securing of cargo for different types of vehicle. A driver who fails to comply with the rules is not permitted to leave our facilities.



### VALUE-ADDED PRODUCTS FROM LAFARGE IN GREECE



**Agilia® vertical** – a self-compacting concrete which does not require vibration during application and gives high quality final surface  
**Agilia® horizontal** – a self-leveling concrete that saves time and money. Agilia also allows less arduous and more efficient manpower deployment.



**Artevia**  
THE ART OF CONCRETE  
A range of decorative concrete floors of high aesthetics and durability. Artevia ensures low construction and maintenance cost as well as long lasting color.



**Ultra series**  
Specialized concrete mixes including Lightweight (for screed application with thermal & acoustic insulation properties), Aqua Proof, a waterproof concrete with self healing properties and Accelerated (rapid set concrete for helicopter finish and better performance in low temperatures).



**agroLAVA**  
One of a range of LAVA pumice special products with application in hydroponic cultivation which was launched at the end of October 2011.

# Supply chain and logistics

Our aim is to do business responsibly, so our contractors and suppliers thrive in partnership with us. This approach includes safety, contractual matters, and environmental and social performance.

## Our role

We are part of a global company but we operate plants and sites in Greece which are part of the local economy. Those who provide us with services, e.g. truck drivers, suppliers of materials, ship operators and equipment manufacturers, include small and medium-sized businesses. Our futures are mutually dependent and at this time of financial crisis in particular, it is important that we exercise our role in the economy with particular care.

## Safety in partnerships

2011 was the first full year in which we operated the Lafarge Contractor Safety Management Standard. The implementation program was described in full in the 2010 Sustainability Report; this year it included, amongst other things, 4150 training hours covering more than 2000 contractors' employees.

## Doing business together

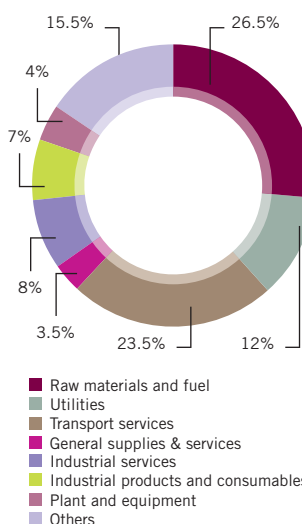
The financial crisis obliged us to extend our payment terms again but we did also continue to operate the "reverse factoring" scheme described in the 2010 Sustainability Report, which has been of benefit to our suppliers. In 2011 about 35% of our purchasing value was paid through this system. Further negotiations concerning prices we pay for materials and services were necessary. We have been working to ensure our own business viability and that of our suppliers and contractors, especially those that depend heavily on Heracles.

## Suppliers' sustainability performance

We have continued to evaluate our suppliers' environmental and social performance. For instance, and especially relevant at the current time, we check that our suppliers are employing their people legally with the right arrangements for insurance and payment of tax.

### Breakdown of suppliers by type

(Percentage of spend in Greece, 2011)  
(Cement)



Raw materials and fuel and transport are the biggest categories of supply.

## defensive driving

### CONTRACTORS

Accidents occurring on the road, especially those involving our sub-contracted truck drivers, are a serious concern. We continued the program of defensive driving training for drivers and owners of silo trucks begun in 2010 with a new round covering all cement Distribution Terminals and Plants. Each seminar included theory, risk assessment (e.g. fatigue, loading and unloading, overtaking) and a practical one to one-on the road exercise with a road safety instructor. Additionally, all our silo trucks are fitted with GPS systems; these are used to optimize trip planning but have the additional benefit of discouraging excessive speed.

A remote control system to avoid overpressure in silo trucks, tested successfully in 2010, has now been installed in 125 vehicles.

## transport footprint

### REDUCING ENVIRONMENTAL IMPACT IN LOGISTICS

Our cement plants need supplies of cementitious materials, such as fly ash, as additives. Cement, in turn, must be delivered to clients and to our distribution centers. Combined delivery began on an experimental basis some years ago with the same trucks taking cement to clients or distribution centers and collecting fly ash on the return journey. In 2011 50% of cement deliveries by the Volos plant and 20% by the Halkis plant were combined with fly ash transport. This has saved fuel and CO<sub>2</sub> emissions, and has also prompted improvements to the truck washing facilities.



### Spending in Greece

(Percentage of spend)  
(Cement)

	2010	2009	2011
Suppliers in GREECE	73%	74%	64%
Outside suppliers	27%	26%	36%

The reduction in proportion of spend in Greece in 2011 is due to the higher price of fuel and of fuel logistics, coupled with a reduction in the number and value of local contracts in order to reduce fixed costs.

How

Transparency is important to us and we believe that our stakeholders appreciate information that is comprehensive and clearly presented. These are not easy goals to achieve but we strive to improve. The contents of this year's report have been adjusted to reflect the transition to one business.

# we report

## Scope

We continue to be guided by our Sustainability Ambitions (please see pages 10 and 11), issues that are important to our stakeholders and up-and-coming topics relevant to sustainability in general.

## Reflecting business changes

Primarily, this is a report on the sustainability performance of the business managed by Heracles General Cement Company in 2011 and it follows previous reports covering 2009 and 2010. We have therefore used, in every instance possible, the same performance measures and methods of presentation as in previous years. This is intended to enable stakeholders view performance over a period of time and form an opinion of our achievements, weaknesses and issues to address.

However, as explained on page 4, in April 2012, the cement business (which includes LAVA) was brought together with the aggregates and concrete businesses of Lafarge in Greece to operate as one business. In the light of this and to assist our stakeholders follow our progress through the transition to one business, we have also included in this report where possible information about the activities and sustainability performance of the aggregates and concrete business during 2011. This is intended to assist us and our stakeholders in establishing the baseline for consolidated reporting in the future, encompassing what is now one business in Greece.

## Data collection, management and assurance

Data that is necessary for the preparation of the KPIs used throughout the Lafarge Group is collected in accordance with Lafarge procedures and consistent with the GRI G3.1 reporting standard. Data on total CO<sub>2</sub> emissions is presented consistent with the requirements of EU Directive 2007/589

while that on emissions per metric ton of cement produced follows the methodology set out in the Cement Sustainability Initiative (CSI) Protocol.

Other environmental data is collected according to the procedures of the Heracles environmental department. Health and safety data and data on policies towards our people are the responsibility of the Health and Safety and Human Resources departments respectively.

Assurance is provided in a variety of ways. The Heracles Environmental, Health and Safety and Human Resources departments each perform internal, verification and consistency checks on the data provided by plants, sites and other units of the business. The Lafarge Group collects, consolidates, reviews and validates data that contributes to the preparation of the Group KPIs and which forms part of the Group Sustainability Report. This is done by the Lafarge Regional Technical Centers. Additionally, Ernst and Young (independent auditors) provide external validation and assurance for the following data items that we submit to Lafarge Group : lost time injury frequency rate, competition policy, training on stakeholder relationship methodology, female senior managers, environmental audit, quarry rehabilitation, CO<sub>2</sub>, dust, NO<sub>x</sub>, SO<sub>2</sub> and water withdrawal.

## Compliance with GRI Guidelines

We have followed the latest Guidelines produced by the Global Reporting Institute (GRI) in the preparation of this report; the relevant Guidelines for a report on performance in calendar year 2011 were GRI 3.1. Compliance with the guidelines has been checked by GRI and found to be A. An index of contents according to the GRI Guidelines is available on our website [www.lafarge.gr](http://www.lafarge.gr).

+web

For the index of contents according to the GRI Guidelines  
visit [http://www.lafarge.gr/GRI\\_Index\\_2011.pdf](http://www.lafarge.gr/GRI_Index_2011.pdf)





## Statement GRI Application Level Check

GRI hereby states that **Heracles General Cement Company, a member of Lafarge Group** has presented its report "Heracles Sustainability Report 2011" to GRI's Report Services which have concluded that the report fulfills the requirement of Application Level A.

GRI Application Levels communicate the extent to which the content of the G3.1 Guidelines has been used in the submitted sustainability reporting. The Check confirms that the required set and number of disclosures for that Application Level have been addressed in the reporting and that the GRI Content Index demonstrates a valid representation of the required disclosures, as described in the GRI G3.1 Guidelines.

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

Amsterdam, 28 August 2012

A handwritten signature in blue ink, appearing to read "Nelmara Arbex", is written over a faint, large watermark of the GRI globe logo.

Nelmara Arbex  
Deputy Chief Executive  
Global Reporting Initiative



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

**Disclaimer:** Where the relevant sustainability reporting includes external links, including to audio visual material, this statement only concerns material submitted to GRI at the time of the Check on 10 August 2012. GRI explicitly excludes the statement being applied to any later changes to such material.

# Progress against our sustainability ambitions

We are entering the last year of our Ambitions 2007-2012 cycle. Many of these objectives have already been achieved, but a few require further progress.

## NEW TARGETS WILL BE ANNOUNCED IN 2012

Target	Deadline	2010 performance	2011 performance	Why is Lafarge pursuing this ambition? What will change? How are we progressing against this ambition?
<b>MANAGEMENT</b>				
<ul style="list-style-type: none"> <li>On <b>safety</b>, reduce the employee Lost Time Injury Frequency Rate (LTIFR) for Lafarge employees to 0.94 or below in 2010.</li> </ul>	2010	0.76	<b>0.63</b>	We continue to make progress with both our own employees and with contractors. Our contractor's LTIFR has also improved to the point where it also is better than the original target we set for our own employees.
<ul style="list-style-type: none"> <li>Continue to check the implementation of our <b>Competition compliance program</b> in our business units. 100% of all significant business units tested for compliance by end of 2010.</li> </ul>	2010	96%	<b>96%</b>	In past years we have reported on the implementation of our competition compliance program in all countries where we operate, with a special emphasis on competition trainings and verification of proper implementation by our business units. We now continue to follow-up this worldwide program with a self-assessment competition compliance questionnaire, which also includes Code of Business Conduct matters (such as anti-corruption rules). 100% of our operations submitted this survey in 2011, allowing the Group to consolidate all results and monitor compliance with our high business ethics standards. Further tools will be established in 2012, including a worldwide e-learning program dedicated to Code of Business Conduct at large.
<ul style="list-style-type: none"> <li>Manage and improve our <b>local stakeholder relationship management</b> by:               <ul style="list-style-type: none"> <li>• training 100% of units in the local stakeholder relationship methodology;</li> <li>• full reporting of the three new indicators.</li> </ul> </li> </ul> <p>Three additional targets (undertaking self-assessment on stakeholder relationships, launching a dedicated intranet site and providing an internal audit screening tool) were completed in 2009.</p>	2012	Cement 81%	<b>Cement 76% A&amp;C: 80%</b>	Training workshops focus on the key drivers for stakeholder engagement: Cement Plant Managers and Aggregates & Concrete (A&C) Area/Regional Managers. In 2011, over 260 people participated in trainings dedicated to this topic. For A&C, there is an improvement from the 22% reported in 2009 (no figure was reported for 2010 due to realignment undertaken during that year). The slight decrease for trained Cement Plant Managers likely reflects a change in personnel. The other objectives have been previously completed.
	2009	Done	<b>Done</b>	
<ul style="list-style-type: none"> <li>On <b>customers</b>, by 2012, the Group will achieve €3bn annual sales in new products.</li> </ul>	2012	€1.9bn	<b>€2.3bn</b>	Although all sales were affected by the recession, sales of new products showed more resilience in the developed countries where they are primarily sold.
<ul style="list-style-type: none"> <li>Reach 20% of <b>women in senior and executive management</b> (Lafarge Hay grades 18+) by 2012.</li> </ul>	2012	13.5%	<b>15.8%</b>	At end of 2011, 15.8% of positions in senior management were held by women, a 16% improvement over 2010. Although it may be difficult for us to reach our target of 20% by end-2012, our program of inclusion which is used to attract and maintain women in both senior management and throughout the organization is making great progress.
<b>SOCIAL</b>				
<ul style="list-style-type: none"> <li>By end 2010, establish a comprehensive Group-wide occupational health program including, at a minimum, regular medical examinations.</li> </ul>	2010	Plan rolled-out	<b>Completed</b>	A protocol for Health Assessment (HASOP) has been developed and broadened in all business units to provide a standardized approach to risk-based medicals. This protocol will ensure that the relevant occupational and personal health risks are identified and managed. Assessments are now under implementation at business units level, and should be finished by 2014.
<ul style="list-style-type: none"> <li>For HIV/AIDS and malaria, by end 2010, Lafarge will have extended to major emerging countries where it operates, its best practice implemented in Africa.</li> </ul>	2010	Completed	<b>Completed</b>	Based on its experience in Africa, the Group has developed a manual and user guide to assess and manage relevant public health issues. Our public health methodology has been extended to Russia and Ukraine, where we have broadened our approach to reflect better the public health issues that are prevalent in these countries.

Target	Deadline	2010 performance	2011 performance	Why is Lafarge pursuing this ambition? What will change? How are we progressing against this ambition?
<b>ENVIRONMENT</b>				
● Have 100% of our sites <b>audited environmentally</b> within the last four years.	Permanent	89%	<b>88%</b>	We need to progress further to reach this objective.
● By end 2010 reach a rate of 85% of <b>quarries with a rehabilitation plan</b> complying with Lafarge standards.	2010	84.5%	<b>86%</b>	We reached this objective in 2011.
● By end of 2010, all our quarries will have been screened according to a criteria validated by WWF International.	2010	91% <sup>(3)</sup>	<b>97%</b>	Building on the screening program, in 2011 Lafarge mapped the location of all its quarries and screened them to confirm locations that are inside internationally protected areas or within 500m of them using IBAT (Integrated Biodiversity Assessment Tool).
● Sites in sensitive areas <sup>(1)</sup> will have developed a site <b>biodiversity</b> program by 2012.	2012		<b>49%</b>	Use of the IBAT tool resulted in a reassessment of the list sites in sensitive areas.
● By end 2010: ●cut our worldwide net <sup>(2)</sup> CO <sub>2</sub> emissions per ton of cementitious by 20% compared to 1990. During 2011, a new objective of reduction of 33% vs 1990 by 2020 was set.	2010	-21.7%	<b>-23.3%</b>	Our new CO <sub>2</sub> emission reductions objective was made public in June 2011 after having widely consulted our stakeholders and our partner WWF. By end of 2011, we have made significant progress, in line with our new objective.
● Cut our <b>dust emissions</b> in our cement plants by 30% over the period 2005-2012.	2012	-33.5%	<b>-38.9%</b>	Although cement plants generate dust, we have continued to make significant progress in lowering emissions through revamping or replacing less efficient air pollution control devices.
● Cut our <b>NOx emissions</b> in our cement plants by 20% over the period 2005-2012.	2012	-27.9%	<b>-33.4%</b>	NOx is emitted from virtually every combustion, including cement manufacture. Since achieving our targeted reduction in 2009 we have continued to implement NOx abatement technologies such as SNCR (Selective non catalytic reduction) and many of our newer kilns are designed with low-NOx precalciners.
● Cut our <b>SO<sub>2</sub> emissions</b> in our cement plants by 20% over the period 2005-2012.	2012	-52.8%	<b>-51.3%</b>	SO <sub>2</sub> can be another unwanted product of some cement kilns. After reducing emissions by around 50% since 2007; in 2011 we started to install abatement systems whose reductions will be seen in future years.
● By end 2010 have a baseline for <b>persistent pollutants</b> in our cement plants for 100% of kilns and reinforce our Best Manufacturing Practices to limit emissions.	2010	100%	<b>100%</b>	Persistent pollutants are emitted by cement kilns. Lafarge is working with WWF to achieve significant reductions in emissions. The program has completed measurement of persistent pollutants in all operating kilns. Plant specific action plans have been developed to reduce emissions from a group of top-emitting plants. Progress with reducing emissions will be monitored and reported.

Progress on our Sustainability Ambitions:

- Fully achieved
- Partially achieved
- In progress

- (1) Sensitive areas are defined as quarries within 0.5km of IUCN I-VI, Ramsar, IBA, Natura 2000.
- (2) Net CO<sub>2</sub> emissions are the gross emissions less the emissions that come from burning waste.
- (3) The change from the figure reported in 2010 is due to a change in definition of active quarries.

# The year at a glance

## Values and Governance

The **Code of Business Conduct** sets the standards of behavior for all employees and executives of the Group as well as for suppliers of goods and services. The Group also set up a **Competition Compliance Program**. It includes awareness building and training for employees and verification at business unit level (96% of them were tested at the end of 2011). The **Board of Directors** is composed of 17 members, 10 of whom are independent including three women. Finally we recognize the UN Declaration on the Rights of Indigenous People, the OECD Principles of Corporate Governance, and the UN Global Compact. See pages 8 to 11.

## Public Positions

We are committed to **responsible lobbying** based on transparency, stakeholder dialogue and in coherence with the Group's strategy and values; to ensure that the Group's long-term interests are taken into account by public authorities. In 2011, our lobbying actions within the European Union focused primarily on **climate change, energy efficiency and resources efficiency** issues. See pages 12 and 13.

## People development and Social dialogue

**Diversity and Inclusion** is a key enabler of the Group strategy and is based on 3 main levers: Behaviors and mindset, communication & awareness and business and HR processes. Another key element of our social strategy is **Employee ownership**; our 2011 LEA share ownership plan reached a subscription rate of 44%, versus 53% in 2009. Moreover, we endeavored to limit or **postpone headcount reductions**, and to assist every affected employee as prescribed in our Employment Policy. See pages 24 to 36.

## Health and Safety

Lafarge's objective is to reach **zero incidents** over the long-term and across all the units, for employees and for contractors. Even though Lafarge has continued to make progress, we still had 34 fatalities in 2011 which is deeply regrettable. To avoid future fatalities, the Group is producing "**Key Learnings**" for each fatal incident that are shared within every operation. See pages 27 to 43.

## Communities

For Lafarge's 2012 Ambitions, the priority was placed on ensuring that the key personnel responsible for stakeholder engagement were **trained on the Group's methodology**. A key area was to ensure that our sites engage in **effective programs** with their communities. Lafarge is also maintaining or creating many **partnerships** to help it evolve its approach and rethink the way it can interact with other organizations. See pages 44 to 59.

## Sustainable Construction

In order to **offer solutions** upstream in the value chain, the Group focuses on **innovation** and carries out research in collaboration with **architecture firms and engineering offices**. Lafarge is present in numerous bodies and working groups on an international and local level, to contribute to progress towards more sustainable methods of construction, in its sector and beyond. See pages 62 to 67.

## Climate Change

Lafarge is implementing a comprehensive strategy contributing to the overall objective of limiting the Earth's temperature increase to a maximum of 2°C. **The Group has set three new targets for 2015 and 2020**, within the framework of its partnership with WWF. They encapsulate **the entire construction chain**. See pages 68 to 77.

## Industrial Ecology and Recycling

**Lafarge is adding value to waste by using it as an alternative fuel or material**. In 2011 we recorded an increase in the substitution of fossil fuels, with 13% of our energy needs for cement production met by alternative sources, such as waste and biomass. We made progress on the Biomass stream which represented 36% of total alternative fuels in 2011. Regarding raw material substitution, we have increased use by 2.3 million tons, mainly due to finished product substitutes, such as slag and fly ash. See page 54 to 57.

## Managing our Emissions

The Group has exceeded its **reduction target** for NOx, SO2 and Dust. For persistent pollutants, Lafarge has continued its 10-year work with WWF to understand and reduce mercury and dioxin/furan emissions from our kilns. One of the biggest improvements in 2011 is the **quality of the data** we are collecting, particularly from emerging countries, after the release of a **new measurement protocol** at the beginning of 2011. For all emissions, **the calculation method has been modified** for current and past data to reflect the latest CSI protocols. See pages 86 to 93.

## Biodiversity at our Sites

**2011 was the International Year of Forests**, a campaign which celebrated and raised awareness of the importance of forests in our societies. This past year we **mapped all of our quarries** and used **IBAT** to confirm the identity of the high biodiversity locations. We **worked in partnership with WWF International** to develop a guidance document for our operations and a leaflet for our visitors. See pages 94 to 100.

## Water Footprint

**A quarter of our cement production takes place in areas where there is high water stress**. In 2011 Lafarge progressed further in its understanding of the water footprint and has set best practices for water management. Several installations of rainwater harvesting have been promoted as a model to limit the use of fresh water. In 2011 the water program was also expanded to aggregate quarries. See pages 101 to 109.

## Sustainability Ratings

**We are recognized for inclusion in the Dow Jones Sustainability Index** with an overall score of 76%. We have also been reconfirmed for inclusion in both the **Ethibel PIONEER** and **Ethibel EXCELLENCE Investment Register**.

For the **Carbon Disclosure Project**, Lafarge is ranked 10th across industries worldwide and is a member of the Carbon Disclosure Leadership Index for the 6th year running. See page 115 to 117.

For the full Lafarge Group Sustainability Report please visit <http://sustainabilityreport.lafarge.com>

# Lafarge's

# presence in the world

World leader in building materials, Lafarge holds top-ranking positions in each of its business lines. With a diversified and balanced geographic portfolio and 68,000 employees in 64 countries, Lafarge is at the heart of global growth, supporting developing economies and responding to the tremendous need for housing and infrastructure in emerging countries.

## Cement

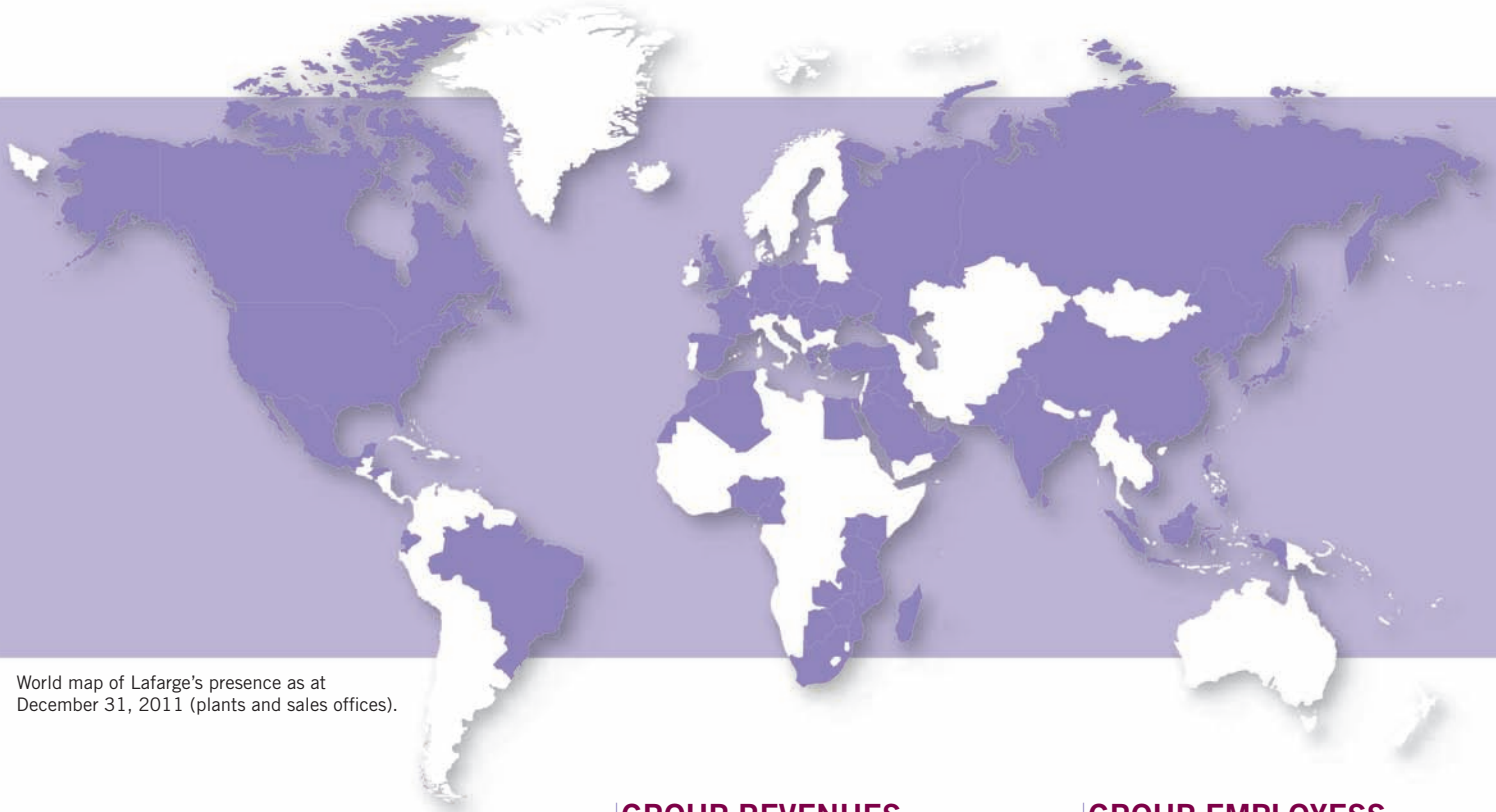
**Worldwide market position:**  
World Leader - Cement, hydraulic binders and lime for construction, renovation and public works  
**Employees:** 43,392  
**Revenues:** 9,975 million euros  
**Countries:** 58  
**Number of plants:** 166

## Aggregates & Concrete

**Worldwide market position:**  
N°2 for Aggregates and N°4 for Concrete - Ready-mix and precast concrete products, asphalt and paving for engineering structures, roads and buildings  
**Employees:** 23,242  
**Revenues:** 5,227 million euros  
**Countries:** 35  
**Number of plants and quarries:** 1,438

## Other

**Employees:** 1,289  
**Revenues:** 82 million euros

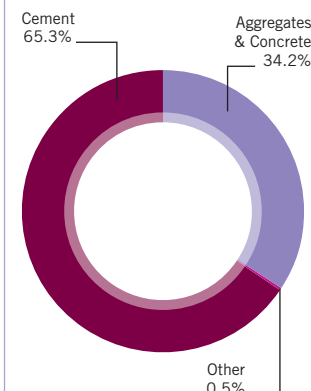


World map of Lafarge's presence as at December 31, 2011 (plants and sales offices).

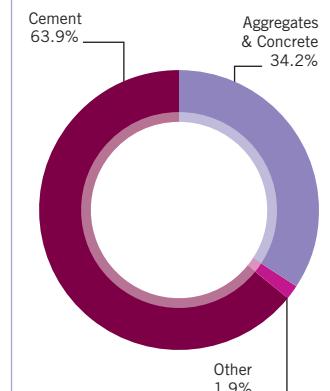
**15,284**  
REVENUES  
(IN MILLION EUROS)

**736**  
NET INCOME  
(IN MILLION EUROS)

## GROUP REVENUES BY DIVISION



## GROUP EMPLOYEES BY DIVISION



# TO KNOW MORE VISIT ↓

[sustainabilityreport.lafarge.gr](http://sustainabilityreport.lafarge.gr)

ON THE PAGE DEVOTED TO "OUR 2011 REPORT" ON OUR WEBSITE, YOU WILL FIND:

- The 2011 Report (PDF version) along with previous editions.
- Details on our reporting methodology.
- Additional information to help you better understand our values and priorities.
- Other case studies providing practical illustrations of our actions.

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