

# SUSTAINABILITY REPORT 2014

LAFARGE MALAYSIA BERHAD



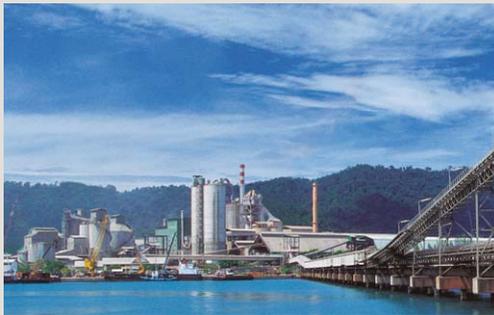
---

# CONTENTS

---

## INTRODUCTION

- 1 Message from President and CEO
  - 2 Company profile
- 



— Building the circular economy —

## 4 MANAGING OUR ENVIRONMENTAL FOOTPRINT

- 6 Alternative Fuels & Recycling
- 8 Biodiversity
- 10 Water
- 11 Emissions



— Building communities —

## 12 CREATING VALUE FOR OUR STAKEHOLDERS

- 14 Health and Safety
- 18 Community Outreach
- 22 Employee Diversity & Skills

---

## 25 KEY PERFORMANCE INDICATORS

## APPENDIX: LAFARGE GROUP INITIATIVES

- 29 Lafarge World Presence
  - 30 Climate Change and Energy
  - 36 Sustainability Ambitions 2020: Overview
- 





## “ Putting Green into Black & White ”

**Bradley Mulroney**, President and Chief Executive Officer

### **There's a first time for everything.**

In this case, it will be the first year that Lafarge Malaysia Berhad is publishing a separate Sustainability Report, not just as a supplement to our Annual Report, but as a standalone record of our commitment to sustainable development. This initiative is inspired and guided closely by the Sustainability Ambitions 2020 of the global Lafarge Group, which brings with it very concrete objectives that are designed to contribute visibly and significantly to society, with a strong focus on Climate Change. Lafarge Malaysia's sustainability measures mirror those of the Group's ambitions with a special focus on those issues most important to us in Malaysia. These ambitions were formulated through comprehensive research, observation, listening, and incorporating the expectation of our employees, customers and communities.

This Sustainability Report details Lafarge Malaysia's efforts in managing its environmental footprint through our actions related to alternative fuel usage, biodiversity, water management and CO<sub>2</sub> emissions. Understanding that sustainability extends beyond ecological concerns, we have also included information on the various activities and initiatives undertaken in terms of health and safety aspects, community outreach programmes, and emphasis on employee diversity & skills. These are detailed in the Creating Value for Our Stakeholders section.

This report is a testament of our journey in taking sustainability further; on the one hand, by moving ahead with our analysis of what sustainability really means to our businesses, and on the other, by reinforcing our commitment to a progressive approach.

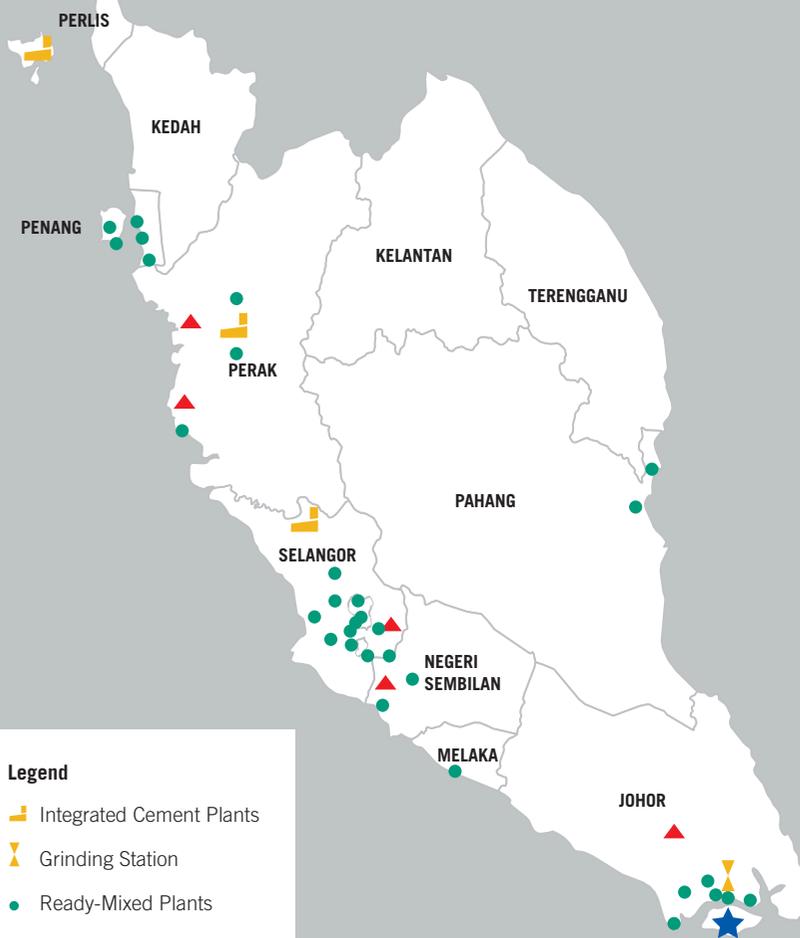
Our inaugural sustainability report is also timely as it highlights yet another significant first; on 22 December 2014, Lafarge Malaysia Berhad was named as one of only 24 companies to be included in the FTSE4GOOD Bursa Malaysia Index, which was established to measure the performance of companies demonstrating good Environmental, Social and Governance performance. The inclusion of Lafarge Malaysia Berhad in this index is testament of our commitment towards sustainable development in Building Better Cities.

We firmly believe that an approach based on sustainability is not a luxury, but rather is a key element in our future success. Our social and environmental achievements complement our economic performance. Our tradition and culture are geared to the long-term nature of our business. It is only natural, therefore, to have the ambition for Lafarge Malaysia to be a leader in developing a sustainable way to do business and to be in a position to benefit from it.

We believe this report is a way of clearly bringing home to all our stakeholders the issues that we face in the context of our business and setting ourselves objectives that we must strive to attain. After all, the best way to truly demonstrate our commitment to a cause, is to put it all down in black and white.

## COMPANY PROFILE

Lafarge Malaysia Berhad is a major player in the Malaysian construction industry, contributing towards Building Better Cities. Our solutions provide cities and townships with more housing, making them more compact, more durable, more beautiful and better connected. Headquartered in the Klang Valley, Lafarge Malaysia has facilities that include three integrated cement plants in Langkawi, Kanthan and Rawang, a grinding station in Pasir Gudang, more than 30 ready-mixed concrete batching plants and 5 aggregates quarries throughout Peninsular Malaysia. These facilities are supported by a wide network of depots, terminals and distribution facilities, connected by road, rail and sea.



## KEY FIGURES

### Revenue

(RM'000)

**2,743,090**

### Profit for the year

(RM'000)

**256,007**

### Number of employees

(as of 31 December 2014)

**1,678**

Our vision for the future is a cleaner and greener Malaysia.  
Lafarge Malaysia intends to lead the way, as we have for over 60 years,  
towards a more sustainable Malaysia.



Langkawi has been home to one of our biggest plants for more than 30 years. Lafarge works closely with its Langkawi community to boost the eco-tourism industries, a key revenue generator for the island.



# MANAGING OUR ENVIRONMENTAL FOOTPRINT



In Malaysia, Lafarge continues to pave the way not just as an industry leader, but also as a pioneer in sustainable development. Guided by the Sustainability Ambitions 2020 programme of the global Lafarge Group, we strive to reduce our impact on the environment through a host of initiatives that extend from our offices and factories, throughout our network from suppliers to customers, and into the communities where we operate. We benchmark ourselves against the Group's performance in terms of reducing our use of natural resources, encouraging the adoption of alternative fuels and improving water management in order to preserve this increasingly scarce resource. Beyond the running of our day-to-day business, we also take our responsibility to the environment very seriously, implementing programmes to enhance biodiversity while also fighting climate change through systematic reduction of emissions.

---

**6** **Alternative Fuels & Recycling**  
**8** **Biodiversity**

**10** **Water**  
**11** **Emissions**

---

# ALTERNATIVE FUELS & RECYCLING

**We strive to reduce our consumption of non-renewable resources by finding new ways to use alternative fuels and alternative raw materials at our plants as part of our sustainable development strategy.**

**T**he cement industry is traditionally associated with the heavy use of energy generated from fossil fuels. However, improvements in technology are increasingly making renewable energy sources such as biomass, more attractive and feasible.

Lafarge is committed to pursuing the use of alternative fuels as part of our sustainable development strategy. One of the global Group's Sustainability Ambitions is to reach 50% usage of non-fossil fuels in cement plants by 2020, with 30% of this comprising biomass. In Malaysia, we are moving steadily towards this goal, with usage of alternative fuels at about 14.0% in our cement manufacturing process in 2014. ◆



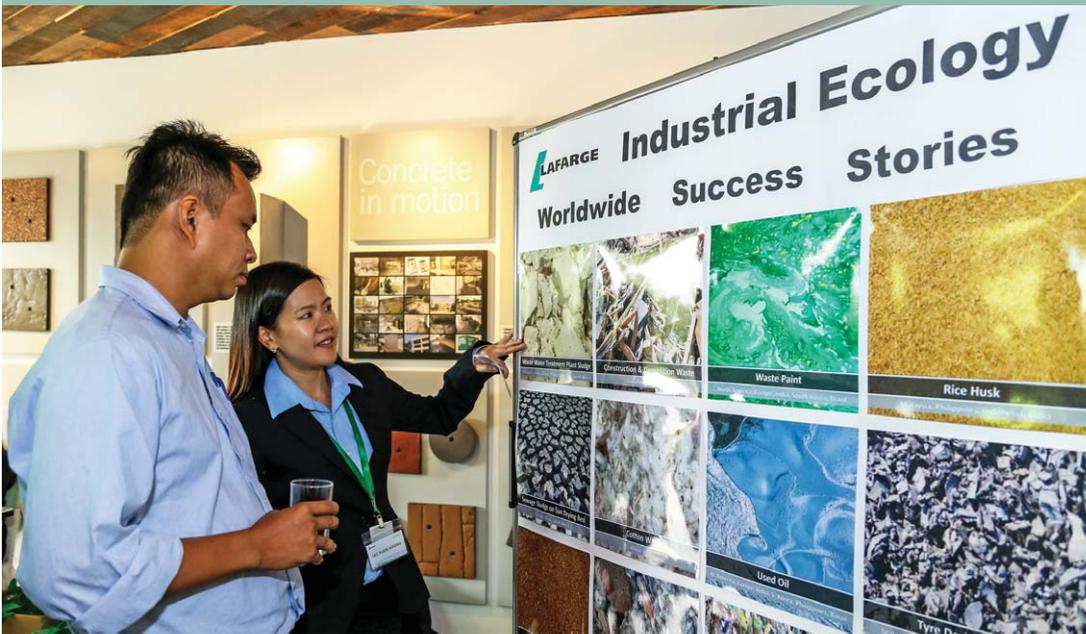
Paddy husks is one of the alternative fuels used in the cement plants.

**14%**

of alternative fuels are used in our cement manufacturing process in 2014.

Photo credit: Lafarge Medialibrary - Ignus Gerber.

## CASE STUDY



### CO-PROCESSING ALTERNATIVE RAW MATERIALS

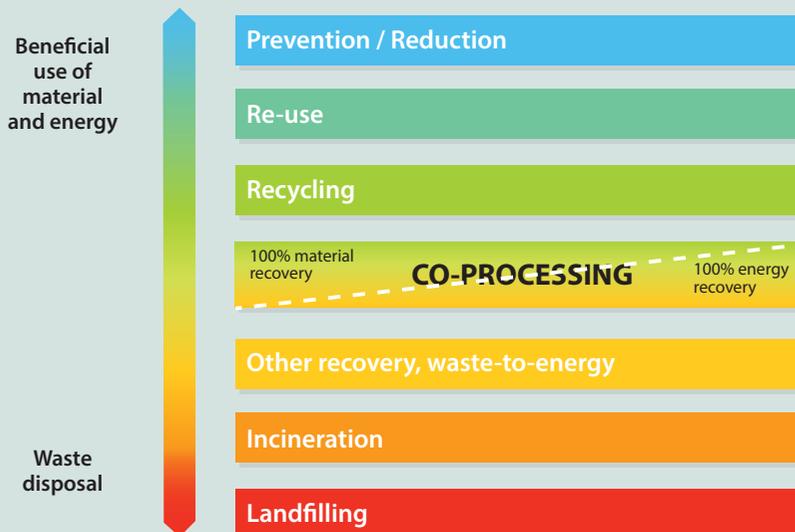
Lafarge Malaysia started its Industrial Ecology initiatives with alternative raw materials over 10 years ago. A cement kiln is by its nature an efficient tool for the recovery of minerals from alternative fuels.

1. Kilns allow for complete burn-out due to:
  - High main burner flame temperature of 2,000°C;

- Relatively longer duration that the material is burned at 1,000°C (min. 5 seconds, vs 2 seconds requirement for incinerators);
2. The high level of oxygen at the kiln burner allows for rapid combustion and complete oxidation and destruction of organic components;

3. During the burn-out process, ashes are incorporated in the clinker since they consist of mineral elements that are by nature required for the clinker, therefore allowing for conservation of virgin raw materials such as limestone;
4. Emissions do not increase, proven by numerous applications worldwide.

In 2014, our initiatives contributed to reduced CO<sub>2</sub> emission by 6,336 tons.



# BIODIVERSITY

**We manage biodiversity at our sites, engaging experts and local stakeholders to protect natural capital and preserve the environment. It is an important part of our commitment to sustainable development, and we continuously seek out new ways in which to enhance our performance in this aspect.**

**M**alaysia's rich biodiversity is a treasure that must be preserved, and it is with this in mind that Lafarge Malaysia has set out to better manage biodiversity and quarry rehabilitation in its areas of operation within the country. All quarries are screened using data from the integrated Biodiversity Assessment Tool and Geographic Information Systems to determine sites with high biodiversity. This identifies the priority for the development of biodiversity management plans, which are developed in close collaboration with local NGOs, universities and stakeholders.

100% of our Malaysian cement quarries have their own specific quarry rehabilitation plan. As an extension of our efforts in this area, in 2013 we engaged University Malaya to undertake a Biodiversity Study on our quarry in Kanthan, Perak. The results were presented to the International Biodiversity Panel where it was discussed and deliberated and more studies were proposed and conducted in 2014. We are currently planning these studies in consultation with experts. We have also started with a Biodiversity Study for our quarry in Langkawi, Kedah.

**100%**

of our Malaysian cement quarries have their own specific quarry rehabilitation plan.



A full-scale deployment of the Artificial Reef Module System (ARMS) in the vicinity of Datai Bay, Langkawi.

## CASE STUDY



### BIODIVERSITY STUDY FOR PROACTIVE CONSERVATION AT KANTHAN HILLS

A biodiversity study on areas around our Kanthan Hills operations have identified some sensitive biodiversity. The study, conducted by a team of 13 researchers led by Prof Dr Rosli Hashim, Head of Biological Sciences Institute, University of Malaya, was aimed at drawing up a species checklist of flora and fauna at Kanthan Hill and evaluating their biodiversity status with reference to conservation and management. So far,

the team has spent a total of 500 hours over an 8-month period for the study, covering over 150 hectares and listing over 400 species. Based on the findings, some recommendations have been drawn up for long-term conservation, bearing in mind that Kanthan Hills is a special site of scientific interest and of national heritage value. These include developing plans for managing the sensitive biodiversity that has been

identified, such as the conservation of the Cathedral Cavern and areas in which the Kanthan Trapdoor Spider and Gua Kanthan Bent-Toed Gecko are located. A proposal for establishing a scientific research station in the area has also been mooted, with the purpose of continuously safeguarding and monitoring the biodiversity of Kanthan Hills and Caves in close collaboration with local stakeholders.

In terms of creating a larger positive impact on sustainability and biodiversity, in 2014, we moved ahead with our collaboration with the Andaman, Langkawi, by performing a full-scale deployment of the Artificial Reef Module System (ARMS) in the vicinity of Datai Bay, Langkawi. We deployed a total of 52 modules over a 1,000 sqm area to the 8,000 year-old coral reefs. Designed to create maximum hiding space for fish, sustaining the underwater eco-system and preserving

the biodiversity of marine species, this initiative seeks to encourage the reproduction of fish, thus creating a sustainable local fishing industry while boosting eco-tourism to the island. The fringing reef in front of the Andaman, which was damaged during the 2004 tsunami, also acts as a barrier to protect people and property by absorbing the impact of waves. We hope to restore this important natural structure to its former glory through this initiative. ◆

# WATER

**Globally, 28% of our cement production is located in areas where water is a scarce resource. As such, it is the responsibility of the Group, and by extension, Lafarge Malaysia, to reduce our water footprint and put into practice more effective water management systems and processes.**

To say that water is an important component in our industry is an understatement, which is why we consider ourselves lucky that Lafarge Malaysia and our production sites are located in areas with abundant water sources. Even so, the country experienced a water crisis from February to August 2014, brought about by an unexpectedly hot and dry season resulting from the El Nino phenomenon. This water shortage has reinforced the importance of water management and reaffirmed our commitment to making full and responsible use of water in our operations.

As such, we continue to research and implement water management technologies that will benefit both our business and the nation as a whole over the long term. We have started to enhance our water management by monitoring the volume of water intake at our production sites. Most of our RMX plants are designed with a closed-loop water system where the processed water is treated and reused back into the batching process. An example can be seen at our Chan Sow Lin concrete batching plant, which is the only RMX plant in the market with the ability to reclaim returned concrete by separating sand, aggregates and water, with the materials then recycled back into the batching process. This demonstrates our commitment to environment protection and sustainable development, something we pride ourselves on even as we discover new ways of expanding on this aspect. ◆

**Most of our RMX plants are designed with a closed-water system where the processed water is treated and reused back into the batching process.**



State-of-the-art enclosed ready-mixed batching plant in Chan Sow Lin, Kuala Lumpur, an industry benchmark for batching plants in urban cities.

# EMISSIONS

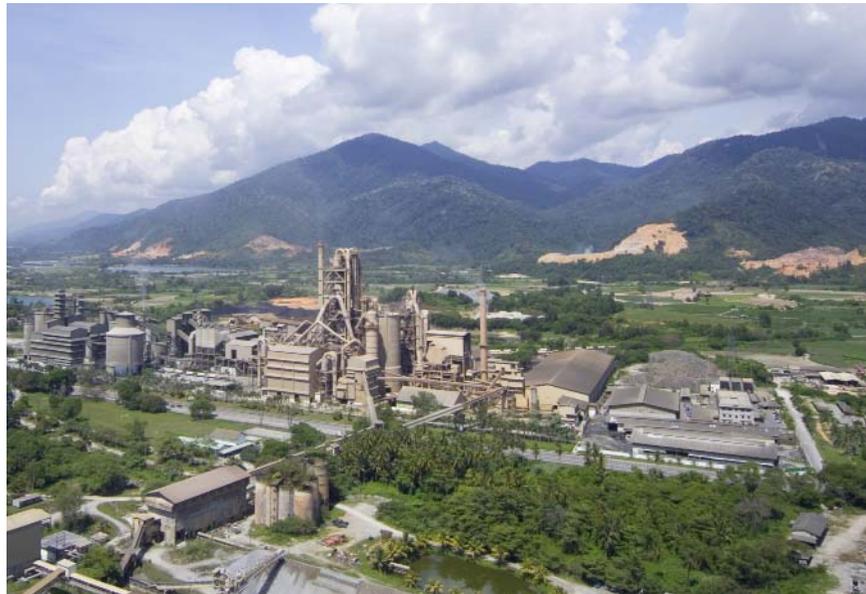
**As part of our environmental stewardship programme and our responsibility towards the communities in which we operate, we set ambitious emission reduction targets in line with the global Lafarge Group's Sustainability Ambitions 2020.**

**E**missions are part and parcel of the industry, and similarly, commitments on emissions reduction have also been part of our sustainability programme for many years. Globally, we have maintained transparency on our CO<sub>2</sub> emissions since being the first in the sector to announce our targets in 2001. In 2014, Lafarge Group scored 84 for disclosure and B for performance in the Carbon Disclosure Project.

Apart from CO<sub>2</sub> emissions, the Group also has guidelines to measure and manage other main emissions from the cement-making process, including heavy metal, dioxins, furans, oxides of nitrogen (NO<sub>x</sub>), oxides of sulphur (SO<sub>2</sub>), dust and mercury.

Supported by investments in plants and R&D directed at finding newer, more effective ways of eliminating these hazardous materials, we are making considerable headway in pioneering abatement systems for major pollutants.

The emission levels at all our plants are tracked and monitored by the Group and reported on a half-yearly basis, on top of complying to local environment regulatory requirements. As an ongoing commitment to reducing emissions and improve sustainability across all business units, Lafarge Malaysia rolled out the Environment Policy to all employees in the company, endorsed by the Executive Committee, in August 2014. 



Our Lafarge Kanthan Plant has contributed significantly to the development of Perak for over 50 years.

The Lafarge Schools project, which was established in 1997, provides bursaries and excellence awards to students with outstanding results in local exams.



# CREATING VALUE FOR OUR STAKEHOLDERS



Lafarge has long been part of the Malaysian society, and thus has a responsibility to the growth and development of the communities in which we operate. People are a priority, and charity always begins at home; by ensuring the well-being of our own employees, we learn valuable lessons with which we can use to positively impact the lives of the people around us. While Lafarge has always made it an important part of our business to create opportunities for the local community in which we operate, it is also vital that we play a larger role in reaching out to Malaysian society. It is with this in mind that we have expanded our community programmes to include various aspects including education, environment and sustainable construction. As our involvement in the country grows, we will discover new ways in which to engage, interact and not just build better cities, but better lives for all Malaysians.

---

**14 Health and Safety**  
**18 Community outreach**

**22 Employee diversity  
& skills**

---

# HEALTH AND SAFETY

Health and safety has always been our foremost priority, our core value.



Every person involved in or affected by our operations be it company or contractor employees as well as third parties, should be able to return home unharmed every day to their loved ones.

In accordance with our objectives as set out in the annual Lafarge Malaysia Country Ambition Plan (CAP), which is linked to Lafarge Group Sustainability Ambitions 2020 programme, we will strive to achieve zero fatalities and zero harm for our employees and contractors. This is grounded in our overarching aim where every person involved in or affected by our operations be it company or contractor employees as well as third parties, should be able to return home unharmed every day to their loved ones.

Work environment, systems and processes, and people behaviour are the three main pillars of our health and safety initiatives. These are monitored through the use of key lead indicators, the summary of which are as follows:

#### No. of Safety Engagements in 2014

Product Line / Plant / Activities	Number of engagements in year 2014
Aggregates	1,470
Ready-Mixed Concrete	3,953
Kanthan	1,245
Langkawi	1,340
Pasir Gudang	464
Rawang	981
Cement Industrial	162
Head Office	395
Supply Chain	148
HSBP	157
<b>Total</b>	<b>10,315</b>

## 0.82

"On-Site" Total Injury Frequency Rate (TIFR).

No. of Motor Vehicles Accidents (MVA) net of third party fault in 2014

Product Line / Plant / Activities	Number of MVA's net of third party fault in 2014
Supply Chain	5
Cement	11
Aggregates	9
Ready-Mixed Concrete	86
CMC	4
Head Office	4
<b>Total</b>	<b>119</b>

#### In-Country & Cross-Country Audits

2014 Audits
In-Country - Pasir Gudang Pant
Cross-Country - Asia Kanthan Plant
Cross-Country - Asia Langkawi Plant

*In-country audit: Internal audit performed by local H&S personnel with the involvement of operations managers as co-auditors, using the Group Health & Safety Management System (HSMS) protocol.*

*Cross-country audit: External audit performed by external (foreign) H&S personnel with the involvement of senior managers and Health & Safety Country Committee members as co-auditors, using the group HSMS protocol.*

*Both audits are performed on an entity once every 3 years. The duration between an internal & external audit is 1.5 years.*

## CASE STUDY



### VISIBLE FELT LEADERSHIP FOR HEALTH & SAFETY ENHANCEMENT

Health and Safety is a key priority at Lafarge, and one of the core values we have instilled over the years. As confirmed by the International Labor Organisation statistics, the vast majority of industrial accidents that occur in the business are caused by the behaviour of people. This has driven Lafarge Malaysia to place strong emphasis on

Visible Felt Leadership (VFL) engagement, where management and supervisory staff maintain constant visibility in the field of operations, observing behaviour and taking actions – whether correcting deviations from expected safe practices or praising when good health and safety behaviour is practiced - as a means of adjusting

behaviour to a higher, more effective standard. Commitment to Visible Felt Leadership engagements is monitored both in terms of quantity and quality, and the process is critical to the overall management of health and safety over the long term, as behavioural and attitudinal change ensures sustainable results are achieved.

#### No. of Serious Event Reviews (SER)

Year	Total SER Recorded
2012	39
2013	37
2014	49

#### No. of Near Misses Reported

Year	Total Near Misses Reported
2012	574
2013	675
2014	497

#### Health & Safety Training Hours

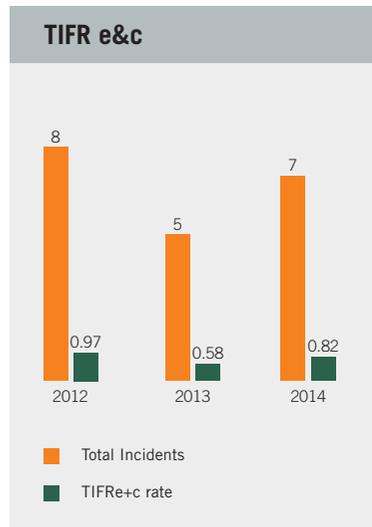
Year	Total Training Hours
2012	54,655
2013	53,438
2014	35,971

### FATALITY-FREE, FINE-TUNING FLAWS

We monitor health and safety performance levels through independently-audited lagging performance indicators, which are also benchmarked against the wider Lafarge Group and other world-leading organisations. In 2014, our business operations extended its fatality-free performance to the third year running, while achieving a Total Injury Frequency Rate (TIFR) for company and contractor rate of 0.82 (“on-site”), in line with the Lafarge Group 2020 Sustainable Ambition target of below 1.0. However, total worked hours for employees and contractors decreased slightly to 8.5 million hours in 2014, compared to 8.7 million hours in 2013, meaning there was a total incident rate of 0.82 for each 1 million hours worked by employees and contractors. The total number of incidents reportable within the TIFR was 7 in 2014 compared to 5 in 2013, which included 3 LTIs compared with 2 in 2013. Additionally, the lost time injury frequency rate (LTIFR e&c) was 0.35 in 2014, compared with the result attained by

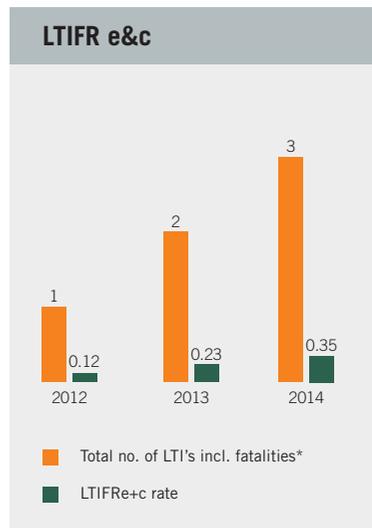
the wide Lafarge Group result, which was 0.49. These are monitored across all operations as indicated in these charts:

TIFR e&c statistics for 2012, 2013 and 2014



*Definition of TIFR e&c:*  
 Total number of fatalities, lost time injuries, medical incidents x 1,000,000 divided by total number of worked hours.

LTIFR e&c statistics for 2012, 2013 and 2014



*Definition of LTIFR e&c:*  
 Total number of fatalities and lost time injuries x 1,000,000 divided by total number of worked hours.

\* Note: There were no fatalities suffered during this period.

In terms of transportation, it is our pleasure to report that no fatalities were suffered, continuing the trend of the previous year. The transport ratio we have maintained is considered outstanding for the total distance driven for the year amounting to 45 million km by contractor vehicles across all product lines. We also achieved 100 million km travelled without a lost time injury for our cement road transport function, an exemplary achievement against a background of 19 road fatalities daily on Malaysian roads. To maintain this performance and improve Malaysian road safety in general, Lafarge Malaysia entered into a Memorandum of Understanding with the Malaysian Institute of Road Safety Research (MIROS) and the Road Transport Department to share knowledge, technology, data management and research results.

**INITIATING IMPROVEMENT, PIONEERING PERFORMANCE**

For Lafarge, continuous improvement is paramount to ensure consistent high performance in health and safety. This is pursued via such activities as annual risk-based improvement planning, in-country and independently led cross-country audits, adopting a policy of no repeats, conducting quality visible felt leadership (VFL) engagements and addressing gaps in key processes and standards.

In keeping with the Lafarge Global Risk Management Standard, product line management teams develop bottom-up H&S improvement plans through hazard identification, risk analysis and a risk-rating process to prioritise their improvement tasks, all of which are validated at the company H&S Sub-Committee. The closure target is a minimum of 90%, tracked quarterly by the committee. Equal focus is also given to field level risk assessment (FLRA) related to job tasks in the operation. In 2014, the Health & Safety Department comprehensively reviewed the FLRA process across all product lines, leading to the enhancement of the Job Plan, Hazard Identification, Risk Assessment and Risk Control (HIRARC) and Pre-Job Start Briefing (JHP) process, including the streamlining of the Permit-to-Work (PTW) process as a key component of JHP. All Lafarge Malaysia operations henceforth will be using a uniform process for their field level risk assessment. This revised process will be reviewed again in 2015 for further refinement.

**45** million km  
 Total distance driven by contractor vehicles across all product lines in 2014.

Over **100** million km  
 travelled without Lost Time Incidents for our cement transporters.

## CASE STUDY



### DRIVERS' SAFETY BEHAVIOUR CHANGE (DSBC) PROGRAMME FOR BETTER ROAD SAFETY

Lafarge continues to maintain an exemplary record in its transportation performance, with no fatalities on the road this year and having achieved an important milestone of 100 million kilometres travelled without lost time injury in terms of cement road transportation. In an effort to continuously improve road safety performance, Lafarge Malaysia launched a Driver's Safety Behaviour Change (DSBC) programme, a

monthly counseling programme for truck drivers. Truck drivers with unsafe driving behaviours which were defined as driving over 80km/h, driving continuously for more than 4 hours, driving between 2am – 5am, and practicing harsh braking are identified and counselled. The objectives of the programme include identifying the root cause of such behaviour for each driver, communicating concerns of violations to

drivers to change their driving behaviour and mindset before something untoward happens, and generally motivating drivers to engage in safer driving behaviour. Also, it is important to highlight to drivers that this is not a disciplinary action, as no penalties are imposed, but rather an effort on behalf of Lafarge to ensure every driver gets home safe to their loved ones.

In terms of audits, three were undertaken this year, at the Pasir Gudang, Kanthan and Langkawi cement plants respectively, with an improvement plan put in place to address identified gaps. As for our no repeats policy, we have put in place a system for root cause analysis as part of closing hazard exposures and anticipating and controlling the potential for more serious occurrences. Our Risk Management Operating Model is also used to analyse more significant cases.

Meanwhile, visible felt management is the company's key behavioural safety system aimed at encouraging management to be visible in the field of operations in order to observe work practice, engage with workers and front line supervisors, and praise or correct depending on practice. This is based on the assumption that a majority of accidents are caused by behaviour, and this system is considered crucial in achieving high levels of safety performance. Over 10,000 engagements were conducted by 220 managers and staff members in 2014, while "quality circle" training was established as a second step to improve the quality of these engagements. A third phase, involving

showing and coaching by senior and middle management, is due to be introduced in the near future.

With regards to Occupational Health management, the goal is to ensure no personnel is harmed by occupational diseases in or around the workplace. To enhance industrial hygiene, in 2014 we commissioned more independent qualitative and quantitative monitoring of dust, noise and ergonomic exposures across all business operations while adopting new sample planning and assessment tools to improve consistency in monitoring those exposures on an annual basis. For occupational medicine, we have developed a Health Assessment Standard Operating Procedure (HASOP) to assess company and contract employees on their fitness for appointed tasks, and will be comprehensively rolled out in the coming year.

## PEOPLE-FOCUSED, PURPOSE-DRIVEN

Throughout 2014, we implemented various activities and initiatives both on a corporate level and across product lines to achieve health and safety objectives.

The Drivers' Safety Day is an event which has been held every year since 2005 as recognition of transporters for their contribution to Health & Safety. 2014 marks the 10th year of this event to raise awareness on Health & Safety and to celebrate this milestone, in Sept 2014, Lafarge Malaysia collaborated with the Malaysia Automotive Institute (MAI) to jointly organised the inaugural MAI – Lafarge Automotive & Logistics Safety Exhibition to showcase and raise awareness on logistics safety to the public. In conjunction with the Drivers' Safety Day, the Memorandum of Understanding between Lafarge Malaysia and the Malaysian Institute of Road Safety Research (MIROS) as mentioned earlier was signed.

This collaboration provides a platform for exchanging road safety best practices benchmarked from other countries, information from road safety research, identification of black spots, and guidance on compliance with ISO 39001: Road Traffic Safety Management Systems. As an extension of our focus on driver safety, we also launched the Driver Safety Passport on 26 September 2014, which acts as one-stop information source of crucial information of the drivers. In terms of practical application and emergency response, a mock drill was conducted on 4 November 2014 in collaboration with Felda Global Ventures and thirteen government agencies. The purpose was to ensure compliance with Lafarge Malaysia's procedures, legal requirement and to test the effectiveness of communication and collaboration between the parties involved, leading to the identification of gaps and weaknesses with which to improve existing procedures.

As a testament to our commitment to exceptional H&S standards, we are proud to have secured a part in the development of the Refinery & Petrochemical Integrated Development (RAPID) at Pengerang, Johor. We successfully met the health, safety, security and environment (HSSE) requirements outlined by Petronas, proceeding to develop, implement and maintain the necessary components to ensure the workplace meets high safety and health standards, making it a comfortable hub for all related parties. ◆

# COMMUNITY OUTREACH

**Our involvement in the community extends beyond the provision of jobs and opportunities. We seek to build meaningful and sustainable relationships with local stakeholders through constant engagement, in line with the Lafarge Group's Sustainability Ambitions 2020 programme. This means ingraining ourselves in the daily workings of Malaysian society, and making the well-being of the people our responsibility.**

**F**or all our production sites, there are proper stakeholder engagement action plan in place to ensure that the needs of the communities in which we operate, are properly identified and managed effectively.

## ARMING UP FOR CONSERVATION

Environmental sustainability is an important aspect of our social engagement strategy, and our collaboration with The Andaman, Langkawi is a clear reflection of our commitment. In 2014, we moved ahead with a full-scale deployment of the Artificial Reef Module System (ARMS) in the vicinity of

Datai Bay, Langkawi, a follow-up to the pilot deployment of five modules in the previous year.

A total of 52 modules were deployed over a 1,000 sqm area on 3 December 2014, aimed at regenerating the 8,000 year-old coral reefs. Designed to create maximum hiding space for fish, sustaining the underwater eco-system and preserving the biodiversity of marine species, this initiative seeks to encourage the reproduction of fish, thus creating a sustainable local fishing industry while boosting eco-tourism to the island.

**52**

**ARMS were deployed over a 1,000 sqm area aimed at regenerating the 8,000 year-old coral reefs in Langkawi, Kedah.**



Employees volunteering their time and effort to make community projects a success.

## CASE STUDY



### KANTHAN SOCIO-ECONOMIC FOOTPRINT

Having been in Malaysia for over 60 years, Lafarge Malaysia continues to fulfill commitments to making a positive impact on local communities. In 2013, the company conducted a formal measurement of the socio-economic footprint in Kanthan, Perak, where one of its key integrated cement operational sites is based. The results of the socio-economic footprint study showed that the Kanthan plant directly employs 527 people, while total employment linked to Lafarge

activities can be calculated at 2,643, leading to an estimated 12,000 local people being supported by Lafarge activities, or roughly 40% of the local population in a 15km radius around the plant. Additionally, 30% of tax paid by the Kanthan operations goes to the state of Perak, with the rest going to the Federal Government. For community programmes, education initiatives remain the key theme for partnerships, with support provided within a 6km radius of the location,

primarily through financial contributions. As an established member of the community, good dialogue exists between the plant and stakeholders, although awareness on the site's operations can be improved through concerted communications efforts. In conclusion, the measured footprint of the plant indicated that although the site plays an important role locally, there is an opportunity to engage more with surrounding communities.

To study the contribution of the ARMS to the fishing industry and the environment, Lafarge Malaysia and The Andaman, Langkawi, inked a Letter of Intent for academic cooperation with University Malaysia Terengganu. This will boost academic collaboration, training of staff and students, and promotion of joint publications, amongst others.

### MOBILISING RELIEF

In the wake of the devastating floods that occurred in the East Coast of Malaysia towards the end of 2014, we were on hand to provide emergency relief to people in the affected areas. Our Lafarge CSR team came together speedily to collect donations and spur volunteerism in support of those affected by the tragedy.

Donations by employees were matched by Lafarge Malaysia to ensure sufficient funds were available to help victims. We also collaborated with our transporters

to enable efficient delivery of aid to those in need. Volunteers were recruited from Lafarge Malaysia employees to purchase and package supplies for flood victims. The first deployment mission with 13 volunteers left for Tanah Merah, Kelantan on 9 January 2015 to deliver supplies, with the team also spending time to clean up a community centre. On 24 January 2015, another deployment mission was organised to Temerloh Pahang, where the team was able to reach out to over 100 families across 10 villages. In total, over RM90,000 has been contributed in cash and in kind by Lafarge Malaysia and its employees to ease the burden of flood victims.

In January 2015, Lafarge Malaysia also contributed 500 bags of cement for a temporary housing programme for the East Coast flood survivors at Kampung Karang, Manek Urai, Kelantan. The programme was initiated by the Kedah Government to build 53 transit houses for the flood victims.



Since its inception in 1997, Lafarge Schools Project has benefited over 2,000 students.

### CELEBRATING TOGETHERNESS

A unique culture amongst Malaysians is the act of “gotong royong”, a form of communal support where people come together to help each other towards a shared goal. In 2014, we conducted several gotong royong activities in areas near our production sites in collaboration with local government offices, villagers and heads of communities. To support the Lafarge Group Sustainability Ambition 2020 to contribute 1 million volunteer hours per year, Lafarge Malaysia has incorporated employees volunteering in the community projects. Many employees have dedicated their time and energy to help out in the cleaning up activities.

Festive celebrations are also a vital part of the Malaysian culture and tradition. We participated in various initiatives to help local residents celebrate important festivals including Chinese New Year, Deepavali and Hari Raya. For instance, we continued our yearly practice of

donating food items and clothing to 100 houses in Teluk Yu and Teluk Ewa residents while also donating aid to single mothers in Ayer Hangat, Langkawi. In Kanthan, festive celebration got a new meaning when the plant team volunteered and helped a local resident to spruce up her home in time for the celebrations. Our many different divisions also collaborated in conducting open houses and buka puasa sessions for residents around our plants. These activities served to further build our connections with the local community in order to facilitate long-term and mutually beneficial relationships.

### DEVELOPING FUTURE GENERATIONS

Education is one of the key focus for Lafarge Malaysia’s CSR activities. The Lafarge Schools project, which was established in 1997, provides bursaries and excellence awards to students with outstanding results in local exams, especially those from low-income families within

the company's coverage areas, including Langkawi (Kedah), Rawang (Selangor), Pasir Gudang (Johor) and Kanthan (Perak). In 2014, close to 300 students benefited from the project.

We also ran various campaigns including donation of exercise books to students sitting for the UPSR exams and also sponsored educational trips for underprivileged students. Encouragement and motivation to school students is crucial to prepare them for the life challenges ahead.

As an extension of our commitment to health and safety, we donated approximately 500 yards of used conveyor belt to PASTI Nurul Atiqah, Sungai Itau, Langkawi for use as fencing for the kindergarten in order to protect students against untoward incidences.

### CEMENTING POSITIVE RELATIONSHIPS

As part of our vision of Building Better Cities, we believe in helping to provide communities with a proper foundation to develop vital infrastructure. One of our regular initiatives involves donating our quality cement products to build houses, community centres and other important structures within the areas we operate in. Apart from continuing our ardent support for building homes under the National Blue Ocean Strategy programme in Johor Bahru, this year we also donated cement to various local communities, including Kampung Bakau Kelibang, Kampung Seberang, Padang Lalang, Ulu Melaka and Sungai Raya, for various purposes such as building suraus and madrasahs, concrete fencing, and study halls. ◆



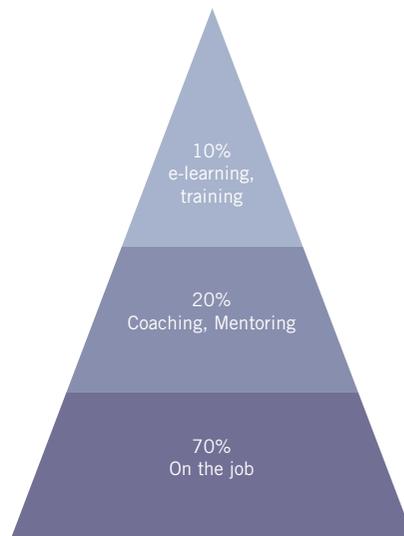
Lafarge employees providing flood relief and helping with the clean-up at Tanah Merah, Kelantan.

# EMPLOYEE DIVERSITY & SKILLS

**In a world that is rapidly changing and competition is stiff, we constantly face many challenges especially in the area of attracting, retaining, motivating and developing our most valuable assets; OUR EMPLOYEES.**

**W**e make it our mission to continuously develop our people to meet the ever changing requirements of today's working environment and also future business needs. Developing our people is a vital investment and an important step to ensure continued growth for Lafarge Malaysia. We are an active partner with our employees in their career development through coaching, feedback, advice, as well as access to learning opportunities and experiences.

To achieve this learning effectiveness, we have introduced the 70:20:10 learning principle for each employee.



**Our corporate onboarding programme is interactive and designed to introduce new hires to the company's vision, mission, values and business direction.**

The principle places emphasis on Experienced Based Development for maximum learning opportunities. The Individual Development Plan (IDP) is used as a supporting tool. IDP is an active document that is driven by each of our employees, with their direct superiors acting as coaches. It is reviewed regularly to bring the plan to life throughout the year. We also inculcate the habit of having monthly one-on-one meetings for effective communication throughout the organisation.

In 2014 we embarked on a journey of transformation through Project Go Beyond. We needed to prepare our employees for these changes by having the right competencies to elevate Lafarge Malaysia to the next level. During this journey, the Commercial and Industrial teams were introduced to several development programmes to help facilitate the transformation.

### DRIVING SALES FORCE EFFECTIVENESS

The Sales Force Effectiveness (SFE) programme was launched in September 2014 for all Sales Representatives throughout the product lines. The SFE programme is an opportunity for us to strengthen our Sales teams' selling skills and inject elements of professionalism. Our Sales Representatives were taught to organise their customer visits, create new reflexes on formalisation, and inculcate a robust follow-up structure. We trained all Sales Representatives and Sales Managers through several SFE modules. We also introduced new product training that covers all Lafarge Malaysia offerings. Through this programme, all new Sales team members were exposed to Concrete, Aggregates and Cement products. Consultative Selling Skills is another programme which we revamped and conducted to address the need for our Sales Representatives to act as advisors and provide solutions to the customers. In line

with our focus on Experience Based training, regular coaching interventions were introduced to the sales team, with coaching conducted by Sales Manager or Sales Development Managers.

### INSPIRING YOUNG ENGINEERS

Since Lafarge Young Engineers Programme (LYEP) was launched in 2004, it has provided Lafarge Malaysia's plant operations with competent engineers to support the industrial operations. A total of 13 Young Engineers completed their 18-month Cement Professional Development Programme (CPDP) in 2014 and were subsequently placed into various positions in the business.

To ensure the programme's sustainability, 10 young engineers from over 300 applicants were recruited to start the LYEP programme in January 2015 after a rigorous assessment and interview process.



Our Sales Representatives are our front liners to advise and provide the solutions to the customers.

### **PUSHING RMX FURTHER**

In 2014, a training centre for RMX was set up in the Klang Valley with the aim of accelerating technical competency development of RMX plant operators and other key personnel. The training centre consists of a class room and a practical activity center. The practical activity center has been resourced with key components of RMX plant and also computer terminals. The centre was officially launched in February 2015.

### **INCORPORATING HEALTH & SAFETY**

In 2014, we established a process to ensure all relevant personnel, including new employees, undergo basic H&S trainings such as Visible Felt Leadership and Defensive Driving. Other H&S programmes that were conducted include First Aid and Emergency Response, Working at Height and Confined Space trainings. In order to streamline the H&S training programmes offered in Lafarge, a Health and Safety Enhancement Training initiative was undertaken in 2014. As part of this initiative, Lafarge H&S professionals were trained in developing training modules. By end of 2014, a total of 10 modules were developed, and will be rolled out in 2015.

### **GETTING EVERYONE ONBOARD**

A new interactive corporate onboarding programme was implemented in 2014. The two-day programme covers, among others, the Lafarge Malaysia journey to become a solutions provider, manufacturing processes introduced through interactive activities, our Code of Business Conduct, H&S in Lafarge Malaysia and Human Resource practices. The programme is designed to ensure all new hires are introduced to the Lafarge Malaysia's Vision, Mission, Values and Business direction within the first two months of joining the company.

### **PROMOTING GENDER DIVERSITY**

One of the Group's Sustainability Ambitions is to enhance access to senior management positions for women, with a target of 35% to be reached by 2020. Lafarge Malaysia is progressing well towards this target. In 2014, 30.5% of senior management positions within the Company was held by women. Talent is identified solely based on merit and through the effective implementation of the IDP process, we have ensured that the right training and development plans are put into place to have a pipeline of talent. ◆



**Lafarge Young Engineers Programme provides the plants with competent engineers to support the industrial operations.**

# KEY PERFORMANCE INDICATORS

## BUILDING COMMUNITIES

Issue	Indicators	2014	Scope	
<b>Health and Safety</b>				
<b>Fatalities</b>	Fatalities (employees)	0	Cement, A&C <sup>(2)</sup>	
	Fatalities (sub-contractors)	0	Cement, A&C	
	Fatalities (third party)	0	Cement, A&C	
<b>Lost Time Injuries<sup>(1)</sup> ("On-site")</b>	Lost Time Injuries (employees)	3	Cement, A&C	
	Lost Time Injuries (sub-contractors)	0	Cement, A&C	
	Lost Time Injury Frequency Rate	0.35	Cement, A&C	
<b>Lost Time Injuries ("Motor Vehicle Accidents" [MVA])</b>	Lost Time Injuries (employees)	0	Cement, A&C	
	Lost Time Injuries (sub-contractors)	1	Cement, A&C	
	Transport Road Accidents Frequency Rate (TRAF)	0.09	Cement, A&C	
<b>General</b>	Medical Injury	4	Cement, A&C	
	On-site	First Aid	22	Cement, A&C
		Near miss	497	Cement, A&C
	MVA	Medical Injury	0	Cement, A&C
		First Aid	3	Cement, A&C
		Near miss	119	Cement, A&C
	Visible Felt Leadership contact rate	10,315	Cement, A&C	
	Sites covered by In-country H&S audit	3	Cement, A&C	
	% of completion for Annual Industrial Hygiene Sampling Plan	96%	Cement, A&C	
	<b>Community and Outreach</b>			
<b>Stakeholder Engagement<sup>(3)</sup></b>	Sites mapping their stakeholders (%)	100%	Cement, A&C	
	Sites developing action plans (%)	100%	Cement, A&C	
	Sites meeting regularly with their local stakeholders / representatives of local communities (%)	100%	Cement	
		Not available	A&C	
	Sites running corporate social responsibility actions	100%	Cement	
	Not available	A&C		
Sites measuring their socio economic footprint (%)	33%	Cement		
<b>Spend and donation</b>	Total cash & In kind contribution (corporate and site)(RM' mil)	1.11	Lafarge Malaysia Group	
	Time: employee volunteering during paid working hours (hours)	6,041	Lafarge Malaysia Group	

Issue	Indicators	2014	Scope
<b>Employee Diversity and Skills</b>			
<b>Workforce</b>	Total Headcount	<b>1,678</b>	Lafarge Malaysia Group
	Full-time employees (%)	<b>97.38%</b>	Lafarge Malaysia Group
	Part-time employees (%)	<b>2.62%</b>	Lafarge Malaysia Group
	Employees under the age of 30	<b>19.73%</b>	Lafarge Malaysia Group
	Employees between 30 and 50	<b>63.35%</b>	Lafarge Malaysia Group
	Employees above 50	<b>16.92%</b>	Lafarge Malaysia Group
<b>Employees by business</b>	Employees in Cement	<b>1,256</b>	Cement
	Employees in Aggregates and Concrete	<b>422</b>	A&C
<b>Turnover and retention</b>	Employee turnover rate <sup>(4)</sup> (%)		Lafarge Malaysia Group
	– <i>Union</i>	<b>9%</b>	
	– <i>Non-union</i>	<b>13%</b>	
<b>Diversity</b>	Top management positions held by women (%)	<b>18.18%</b>	Lafarge Malaysia Group
	Senior management positions held by women (%)	<b>30.5%</b>	Lafarge Malaysia Group
	Junior management positions held by women (%)	<b>29.63%</b>	Lafarge Malaysia Group
	Women in total workforce (%)	<b>24.97%</b>	Lafarge Malaysia Group
	Total number of incidents of discrimination, harassment or bullying	<b>0</b>	Lafarge Malaysia Group
	Total number of corrective actions taken on above incidents	<b>0</b>	Lafarge Malaysia Group
<b>Employee satisfaction</b>	Employees survey conducted in the year	<b>Yes</b>	Lafarge Malaysia Group

## BUILDING THE CIRCULAR ECONOMY

Issue	Indicators	2014	Scope	
<b>CO<sub>2</sub> and Other Emissions</b>				
<b>Carbon emissions</b>	Gross CO <sub>2</sub> emissions (million tons)	<b>Not available</b>	Cement	
	Net CO <sub>2</sub> emissions (million tons)	<b>Not available</b>	Cement	
	Specific CO <sub>2</sub> emissions - gross (kg / ton cementitious material)	<b>743.5</b>	Cement	
	Specific CO <sub>2</sub> emissions - net (kg / ton cementitious material)	<b>Not available</b>	Cement	
<b>Other emissions</b>	NOx emissions (ton / year)	<b>9,611</b>	Cement	
	Specific NOx emissions (g / ton clinker)	<b>1,496</b>	Cement	
	SOx emissions (ton / year)	<b>97</b>	Cement	
	Specific SOx emissions (g / ton clinker)	<b>15</b>	Cement	
	Dust emissions (ton / year)	<b>811</b>	Cement	
	Specific dust emissions (g / ton clinker)	<b>126</b>	Cement	
	Mercury emissions (ton / year)	<b>0.23</b>	Cement	
	Specific mercury emissions (mg / t clinker)	<b>36.5</b>	Cement	
	Dioxin / Furan emissions (g TEQ / year)	<b>Not available</b>	Cement	
	Specific dioxin / furan emissions (pg / ton clinker)	<b>30.5</b>	Cement	
	VOC emissions (kt / year)	<b>19</b>	Cement	
	Specific VOC emissions (g / ton clinker)	<b>3.0</b>	Cement	
	<b>Energy Consumption and Resource Management</b>			
	<b>Energy efficiency</b>	Total energy consumption (PJ)	<b>25.3</b>	Cement
Total power consumption (GWh)		<b>871.4</b>	Cement	
Total fuel consumption (PJ)		<b>22.2</b>	Cement	
Specific heat consumption of clinker production (MJ / ton clinker)		<b>3,450</b>	Cement	
<b>Alternative fuels</b>	Alternative fuels (% of fuel consumption)	<b>14.0%</b>	Cement	
	Biomass fuel rate (% of fuel consumption)	<b>6.4%</b>	Cement	
<b>Materials</b>	Quantity of quarried material (million tons)	<b>Not available</b>	Cement	
	Alternative raw materials rate	<b>Not available</b>	Cement	
	Consumption of material (million tons)	<b>0.074</b>	Cement	
<b>Waste</b>	Hazardous waste recovered (kton)	<b>74.119</b>	Cement	
<b>Natural Resources</b>				
<b>Biodiversity</b>	Quarries with a rehabilitation plan in place	<b>37.5%</b>	Lafarge Malaysia Group	
	Total ha of rehabilitated area	<b>Not available</b>		
	Quarries screened for international biodiversity sensitivity using IBAT data	<b>12.5%</b>	Group	
	Quarries with red listed species (from IUCN protected species list)	<b>12.5%</b>	Group	
	Total quarries with a biodiversity programme	<b>1</b>	Group	

<sup>(1)</sup> Lost Time Injuries include fatalities.

<sup>(2)</sup> A&C: Aggregates & Concrete

<sup>(3)</sup> Stakeholder mapping means that their local stakeholders and their needs are known. Annual engagement plans detail planned stakeholder engagement. Corporate Social Responsibility (CSR) actions represent financial and non-financial contributions towards community programmes or partnerships.

<sup>(4)</sup> The turnover rate represents the number of people who left Lafarge Malaysia Group in 2014 divided by total headcount at end 2014.

---

# APPENDIX

---

# LAFARGE GROUP INITIATIVES

29 Lafarge World Presence

30 Climate Change and Energy

36 Sustainability Ambitions 2020: Overview

## COMPANY PROFILE

# LAFARGE WORLD PRESENCE<sup>1</sup>

World leader in building materials as major player in the cement, aggregates and concrete industries<sup>2</sup>, we contribute to the construction of cities throughout the world. Our innovative solutions provide cities with better housing and make them more compact, more durable, more beautiful and better connected. The Group operates in 61 countries<sup>3</sup> and employs 63,000 people<sup>5</sup>. It generates annual sales of €12.8 billion.



SHARED VALUE AT LAFARGE <sup>6</sup>	€m 2013	€m 2014	%
Sales	15,198	12,843	-
Costs of goods sold	10,265	8,631	-
Cash value added	4,933	4,212	100
Paid to employees for their services	2,239	1,917	45.5
Paid to lenders as a return on their borrowings	1,041	870	20.7
Retained for growth	819	666	15.8
Community investment	20	27	0.6
Net cash	814	732	17.4
Income taxes paid to governments	525	443	60.5
Paid to investors for providing capital	289	289	39.5

Revenues<sup>5</sup>

## €12,843m

Number of countries<sup>4</sup>

## 61

## Number of employees

## 63,000

Number of production sites<sup>5</sup>

## 1,612

Number of quarries<sup>5</sup>

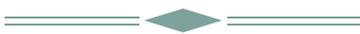
## 680

GRI STANDARD DISCLOSURES :  
 1. G4-3/2, G4-4/3, G4-6/4, G4-8/  
 5. G4-9/6, G4-EC1

# CLIMATE CHANGE AND ENERGY<sup>1</sup>

Climate change is a defining challenge for the 21<sup>st</sup> century and a major challenge for the construction sector as a whole. Over the last few years Lafarge has developed a comprehensive climate and energy strategy. As a major emitter of greenhouse gases, with direct emissions of 89.8 million tons in 2014 and an additional 11.3 million tons from energy purchased and emissions associated with the transport of our products, we are aware and accept our responsibility to minimize and offset these emissions through our actions.

GRI STANDARD DISCLOSURES P.8 TO 13:  
1. E4-EC2 / 2. G4-12 / 3. G4-EC2



# INTRODUCTION

Cement is a key ingredient in concrete, the most used material on earth after water, vital for the construction of housing and infrastructure and, therefore, a cornerstone of socio-economic progress. Part of the reason for the high levels of CO<sub>2</sub> emissions associated with cement production is the sheer volume of cement required to produce concrete: an estimated 3.7 billion tons in 2012 alone<sup>1</sup>.

At the same time, cement and concrete can make a positive impact towards meeting the challenges of climate change, working towards net zero CO<sub>2</sub> emissions (within the 'two-degree threshold') by providing

energy efficient construction solutions that contribute towards more compact, connected and durable cities, which are of vital importance in the context of increasing urban development.

Our climate change and energy strategy revolves around the following three areas:

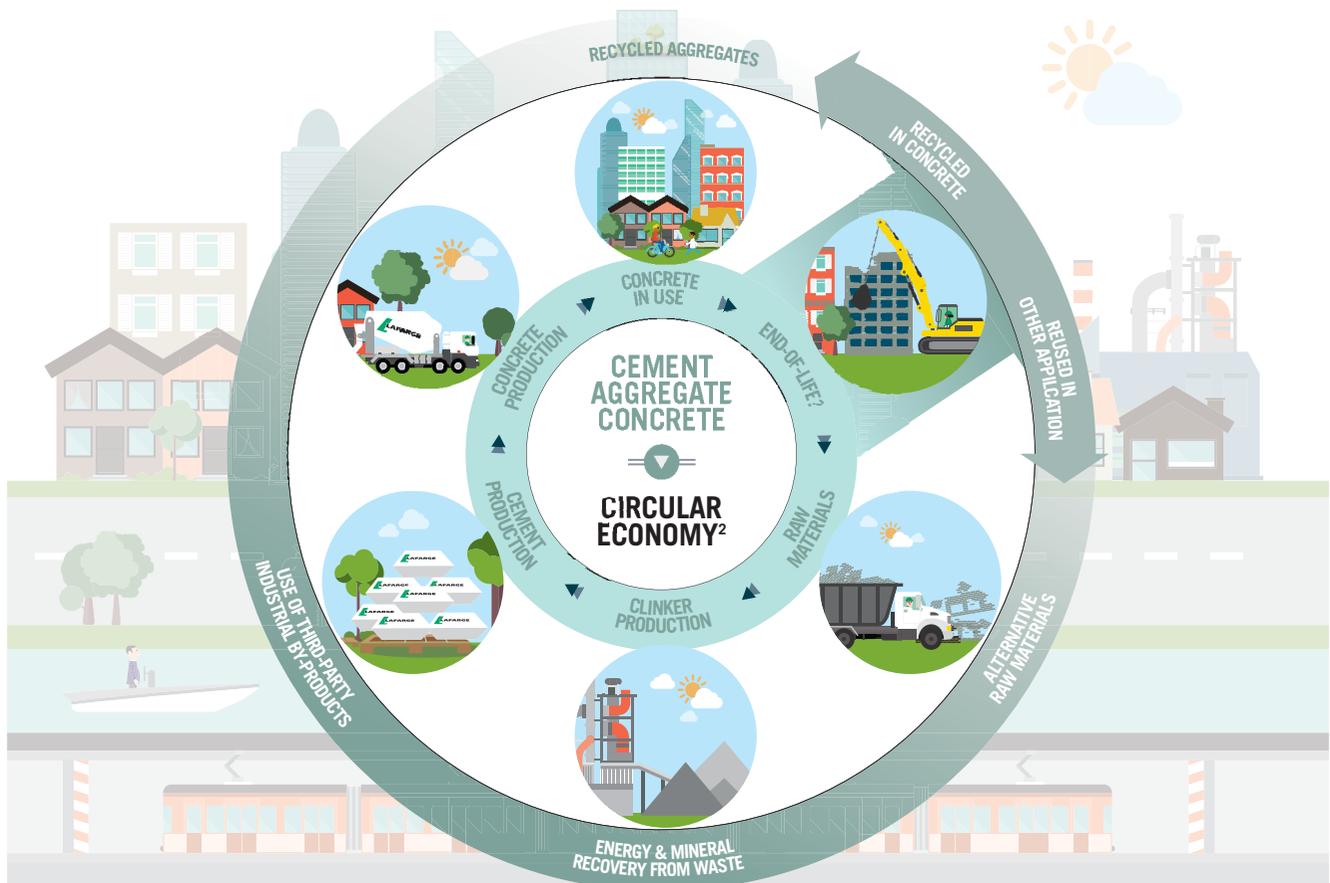
- Contributing to the reduction of society's overall emissions, through construction solutions to **improve building energy efficiency**;
- **Reducing our direct emissions** per ton of cement, through industrial performance programs and R&D to develop lower-carbon solutions; **and also our indirect emissions**, by using

more renewable energy and lower-carbon transport;

- **Promoting responsible energy and climate policies** by business and governments.

There is an increasing focus on not only limiting climate change but also adapting to the effects of climate change that are unavoidable and already present today. Concrete is very resilient to extreme weather conditions and our product mix designs are optimized to develop concrete with the capacity to withstand the potential effects of climate change.

1. Source: Global Cement magazine



# IMPROVING BUILDING ENERGY EFFICIENCY

**Buildings today account for 40%<sup>1</sup> of the energy use and around one-third of carbon emissions worldwide. Buildings consume 90% of their total energy during usage through heating, lighting and air-conditioning; only 10% of consumption is linked to the manufacture of building materials and the construction phase.**

With existing technologies, including cement and concrete-based solutions, it is possible to reduce this energy consumption by 60-80%. As a leading building materials manufacturer, we have developed a number of solutions, including:

- New products, such as our Thermedia® range of structural, insulating concrete,
- Our Efficient Building™ construction systems, such as double-skin concrete walls or UHPC lightweight insulated facades,
- Energy-efficient buildings such as the ABCD+ positive energy house, developed in partnership with French individual home-builder Cécile Robin,
- Solutions for sustainable cities, such as the Zenata 'eco-city' project in Morocco, for which we are working in partnership with Reichen & Robert, the urban planning agency, and Novec, the engineering design firm.

In all these examples, we have collaborated with actors across the construction value chain to transform the approach taken. The implementation of energy efficiency measures can often be frustrated by non-technical factors such as lack of awareness and transparency, technology inexperience, decision-making and operating complexities and investment uncertainty.

As a result, Lafarge is leading initiatives such as EEB (Energy Efficiency in Buildings), launched under the auspices of the World Business Council for Sustainable Development (WBCSD) and co-chaired with United Technologies. Bringing together players from across the construction sector – investors, regulators, architects and engineers, material and equipment suppliers, and end users of solutions – this project is focused on developing new forms of collaboration to achieve an 80% reduction in building energy consumption by 2050.

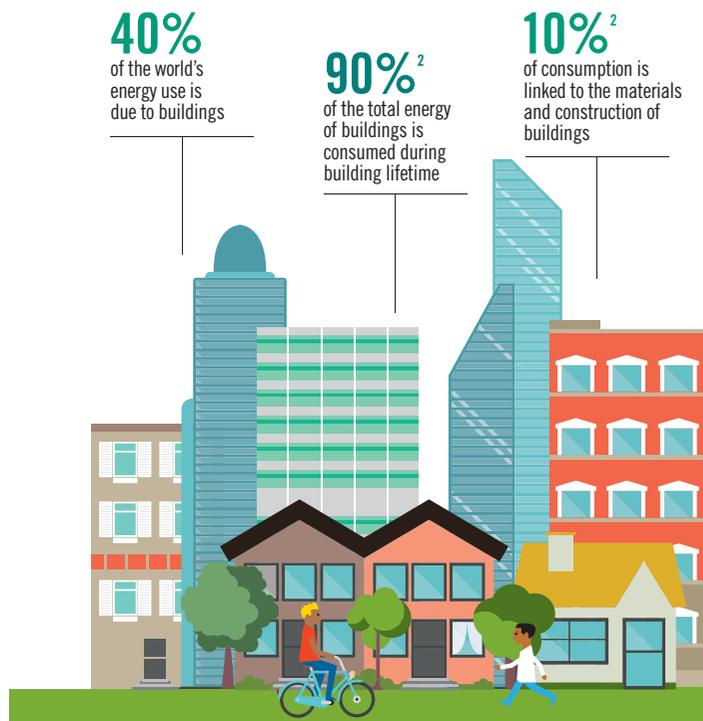
As a signatory to the Manifesto for Energy Efficiency in Buildings, we are also committed to reducing our own buildings' energy consumption. Following audits at 20 offices across 15 countries, which represent 85% of the Group's total office floor space, we implemented energy saving measures that enabled a 12% reduction in energy consumption across these offices in one year, as part of our program 'My Low Energy Office'.

1. IEA website

2. Concrete Sustainability Hub, MIT

## 80%

reduction in building energy consumption by 2050: this is the objective of Lafarge by developing new forms of collaboration across the value chain



# REDUCING DIRECT AND INDIRECT EMISSIONS

We have been reducing our carbon footprint since 1990. Our voluntary commitment to reduce CO<sub>2</sub> emissions per ton of cement – the first company in the sector to do so – was made back in 2001 and the target was met ahead of schedule. Our objective today is to reduce our CO<sub>2</sub> emissions per ton of cement by 33% by 2020 (compared to 1990 baseline). By 2014 we achieved a 26.4% reduction.

## Scope 1

We have focused on three established levers to reduce emissions: improving kiln energy efficiency, substituting fossil fuels with other energy sources and using additives, such as slag, fly ash and pozzolan, to produce less carbon-intensive blended cements.

- In order to reduce the energy required to produce cement, we are deploying a world-class operating model (POM 2.0) at all cement plants. Covering all phases of plant operations, POM 2.0 contributes to improved production expertise and more reliable, energy efficient plants. This supplements ongoing initiatives that result in year-on-year improvements in energy efficiency.
- A key lever for increasing sustainability is the replacement of conventional fuels with those manufactured from industrial, household or agricultural waste. Our use of these alternative fuels has progressed significantly in the past years, reaching an average substitution rate of 20.7%<sup>1</sup> in 2014, resulting in a CO<sub>2</sub> reduction of 6.3 million tons. Using processed waste as a fuel for cement kilns reduces our environmental footprint, secures energy supplies over the long term and improves plant competitiveness. It can also contribute to more efficient and safer waste management in countries where processing capabilities may be inadequate or nonexistent and generate local economic activity and jobs.

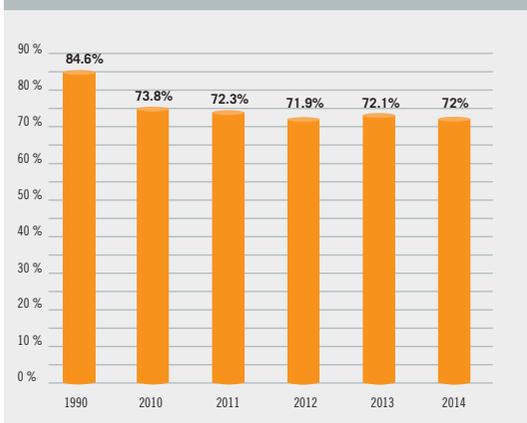
An important aspect of this program concerns the use of renewable biomass as fuel. Our biomass fuel use has increased considerably in the last three years, particularly in Sub-Saharan Africa, where we have established local agricultural projects that can also generate biomass residues such as coffee, rice and corn husks for our kilns. The biomass content accounted for 39% of overall alternative fuel use in 2014, significantly higher than the 30% we targeted in our 2020 Sustainability Ambitions program. ▶

[See Alternative Fuel and Recycling chapter page 18 for more information]  
 1. Consolidated according to financial standard IFRS11

A COMPLETE STRATEGY		
Scope 1	Scope 2	Scope 3
<p><b>Scope 1 emissions: industry</b></p> <p>3 traditional levers:</p> <ul style="list-style-type: none"> <li>• Improving kiln energy efficiency</li> <li>• Substituting fossil fuels with other energy sources</li> <li>• Produce less carbon-intensive, blended cements</li> </ul>	<p><b>Scope 2 emissions: electricity generation</b></p> <ul style="list-style-type: none"> <li>• Leadership in the use of renewable energies</li> <li>• Capturing the excess heat generated by production to generate electricity</li> </ul>	<p><b>Scope 3 emissions: transportation of products</b></p> <ul style="list-style-type: none"> <li>• Optimize transportation</li> <li>• Use rail and water transports</li> </ul>



Clinker factor / Proportion of clinker in cement



- As the vast majority of our greenhouse gas emissions are associated with the production of clinker – the key ingredient to make cement – the environmental footprint of the product can be lessened by reducing the quantity of clinker used. Continuous improvements have been achieved, in the context of meeting customer requirements.

In addition to addressing industrial performance, we are also harnessing R&D to develop new lower-carbon cements. The objective of this research is not only to reduce the footprint of specific products, but also to provide solutions that can be manufactured on a large-scale through potential adaptations of existing production facilities. R&D can also result in beneficial performance characteristics (in some countries, Lafarge advocates for changing building codes, norms and standards to accept new low-carbon innovative products).

- Our teams are currently engaged in pre-industrialization work for a new generation of lower-carbon Aether® cements. These cements provide similar performance in a range of applications, but with an overall carbon footprint reduced by 25-30%. The high dimensional stability of Aether® cements makes them a particularly promising alternative in low-shrinkage applications. In 2014 Aether®-based screeds were tested at our research facilities and on client sites.
- In partnership with US start-up Solidia Technologies, work is underway to industrialize a new solution that could reduce the carbon footprint of precast concrete by up to 70%. Following a trial to confirm the industrial feasibility of Solidia Cement™ at our Whitehall plant in the US and a series of tests at precast clients in autumn 2014, preparations are underway for commercialization of the product.

Improvements across the entire product and solutions range enable market requirements – driven in particular by the worldwide trend of urban growth – to be met through the development of taller, more efficient tower buildings or bridges and infrastructure that are as delicate as they are solid.

## Scope 2

Our responsibility also extends beyond CO<sub>2</sub> emissions generated from industrial process (scope 1 emissions) to include indirect emissions. Reducing CO<sub>2</sub> emissions linked to electricity generation (scope 2 emissions) can be addressed through increased use of renewable energy, although as a large power consumer it has been difficult to tackle this issue at the scale required: adding renewable power to a cement plant will increase capital costs by 25 to 30% and in many emerging countries the power infrastructure is not sufficient to support the backup load requirements of a cement plant.

We have some experience with successful projects, particularly at our Tetouan plant in Morocco where a wind farm capable of meeting all of the plant's power needs has been established since 2005. However, due to the capital intensive nature of such projects, our investment has been prioritized on improving production and efficiency capabilities rather than replicating this model. As a result, the focus has remained on buying energy from more sustainable sources, where it is feasible and economically viable.

## Scope 3

CO<sub>2</sub> emissions reduction linked to product and materials transportation (scope 3 emissions) is progressed through optimizing distribution towards rail and water transport, which tend to be less energy intensive. Again, our approach has focused on country-led projects, including established supply hubs developed around the Great Lakes region in the US and in the Ile de France region around Paris and the introduction of biodiesel for operating and distribution vehicles. Currently, there is no group-wide policy to accelerate progress beyond successful country-led projects.



# 39%

The biomass content of our alternative fuels was 39% in 2014, significantly higher than the 30% we targeted in our 2020 Ambitions program.

# -30%

The new generation of lower-carbon Aether® cements provides similar performance with an overall carbon footprint reduced by 25-30%

# PROMOTING STRONG CLIMATE AND ENERGY POLICY

**#climattitude /**

It's the mindset that brings together a range of our initiatives to fight climate change.

**Lafarge is a strong advocate of responsible energy and climate policies, particularly through participation and leadership in associations such as European Round Table of Industrialists (ERT) and WBCSD<sup>3</sup>.**

Through association participation, as well as in policy papers and day-to-day contacts with authorities in different markets, we have supported the introduction of policies that eliminate subsidized fossil fuels, establish a meaningful price on carbon while avoiding 'carbon leakage', and promote long-term price stability to avoid volatility in carbon markets that would be detrimental to investment. We also promote economic policy to incentivize the R&D necessary to achieve net zero CO<sub>2</sub> emissions by 2100\*.

In 2014 we signed the World Bank initiative 'Putting a Price on Carbon', a manifesto that recognizes the importance of aligning carbon pricing to incentivize reduced energy use. To this end, Chairman and CEO of Lafarge, Bruno Lafont, participated in the Private Sector Forum at September 2014's UN Climate Summit, which brought together heads of state and leaders of international and civil society businesses to discuss the role that the private sector can – and should – play in the development of solutions to fight climate change, in the build up to UN's Climate Change Conference (COP21) that will be held in Paris in December 2015. It is through participating and leading in these types of events, including the WBCSD's climate and energy program that we contribute towards solutions such as carbon pricing.

We also believe that policies should not be limited to targets for CO<sub>2</sub> emissions reduction and should also encourage energy efficiency and innovation in the value chain - especially in the building sector. For example, codes and norms focusing on buildings' energy performance, rather than use of specific materials, would facilitate more potential for innovation and, therefore, lead to greater reductions in CO<sub>2</sub> emissions.

\*UNIPCC report, November 2014

**IPCC FIRST ASSESSMENT**  
CO<sub>2</sub> is identified as contributing to over half of the greenhouse effect

**RIO EARTH SUMMIT**  
Beginning of a program to fight global climate change, preserve biodiversity and combat desertification

**KYOTO PROTOCOL**  
States from industrialized countries commit to reduce GhG emissions by an average of 5% below 1990 levels by 2012

**COPENHAGEN CLIMATE CONFERENCE**  
States fail to agree to legally binding reduction targets

**PARIS CLIMATE CHANGE CONFERENCE**  
All states will gather in Paris to achieve a legally binding and universal agreement on climate



**FIRST GLOBAL ENERGY PLAN**  
Lafarge launches its global energy plan as part of its first 3-year technical plan in 1991

**LAFARGE AND WWF PARTNERSHIP**  
Lafarge makes commitment in 2001 to reduce CO<sub>2</sub> emissions per ton of cement by 20% by 2010 (from a 1990 baseline)

**-21%**  
Lafarge reaches emissions reduction target 1 year in advance

**2020 AMBITIONS**  
Lafarge sets 2020 target on emissions reduction (from a 1990 baseline)

**-26.4%**  
Lafarge reduced by 26.4% its CO<sub>2</sub> emissions per ton of cement in 2014

**-33%**  
Lafarge's target for CO<sub>2</sub> emissions reduction per ton of cement by 2020

# SUSTAINABILITY AMBITIONS 2020: OVERVIEW

BUILDING THE CIRCULAR ECONOMY				
Objective	Target Year	2013	2014	How we are progressing?
		Performance	Performance	
<b>Enhance biodiversity:</b> 100% of quarries and cement plants to implement Biodiversity Management Plants in line with Lafarge standards by 2020, and by 2015 for regions with local biodiversity sensitivity.	2015	40%	44.3%	BMP completed at almost all quarries with high <sup>1</sup> biodiversity and 48.4% of locally sensitive <sup>2</sup> quarries
<b>Enhance biodiversity:</b> 100% of our quarries to implement rehabilitation plans in line with Lafarge standards by 2015	2015	85.1%	87.6%	Rehabilitation plans will need to be accelerated in 2015, mainly for cement operations.
<b>Continue our program of reducing CO<sub>2</sub> emissions:</b> Reduce by 33% our net CO <sub>2</sub> emissions per ton of cement compared to 1990 levels by 2020.	2020	-25.9%	-26.4%	Overall reduction was lessened by shortage of natural gas in some regions which compelled the Group to switch to solid fuels
<b>Continue our program of reducing environmental footprint:</b>				
50% reduction in dust emissions per ton of clinker compared to 2010 levels, with no kilns emitting more than 50 mg/Nm <sup>3</sup>	2020	-23.7%	-32.2%	Good progress enabled by continued investment in dust collecting equipment at plants
25% reduction in NOx emissions per ton of clinker compared to 2010 levels.	2020	-16.9%	-24.5%	
30% reduction in SO <sub>2</sub> emissions per ton of clinker compared to 2010 levels.	2020	-4%	-31.8%	
30% reduction in mercury emissions per ton of clinker compared to 2010 <sup>3</sup> .	2020	24.3 mg/t	22.6 mg/t	Focus remains on highest emitting plants
<b>Enhance local watershed sustainability:</b> 100% of cement and aggregate operations to complete water risk assessments by 2014.	2014	100%	100%	Methodology developed for engaging stakeholders on local water issues
<b>Enhance local watershed sustainability:</b> 100% of operations in water impacted areas to engage local stakeholders in developing a local watershed sustainability plan and reduce water impact by 2020.	2020	-	33%	
<b>Increase resource efficiency:</b> 20% of our concrete to contain reused or recycled materials by 2020 <sup>4</sup> .	2020	0.1%	0.3%	Challenge of deploying at scale remains
<b>Develop use of non-fossil fuels in our cement plants:</b> Use 50% of non-fossil fuels in our cement plants by 2020 (on an equity consolidated basis; 30% of which should be biomass).	2020	17.2%	20.7%	Biomass makes up 38% of alternative fuels in 2014

## BUILDING SUSTAINABLY

Objective	Target Year	2013 Performance	2014 Performance	How we are progressing?
<b>Provide solutions for access to housing:</b> Enable 2 million people to have access to affordable and sustainable housing by 2020.	2020	120,000	300,000	Our program now covers 18 countries
<b>Develop sustainable products and services:</b> Increase sales of new sustainable solutions, products and services to €3 billion per year.	2020	1.8bn€	1.8bn€	In 2015, we will increase focus on sustainable concrete
<b>Reduce the environmental footprint of buildings:</b> Contribute to 500 energy efficient construction projects using at least one of the Lafarge Efficient Building™ Systems by 2020 <sup>5</sup>	2020	-	54	Reporting process is being improved.
<b>Promote the implementation of sustainable construction solutions for cities:</b> Become an active member in sustainable building certification organizations in 35 countries by 2020.	2020	-	13	More country units are promoting sustainable construction in line with their national context.

## BUILDING COMMUNITIES

Objective	Target Year	2013 Performance	2014 Performance	How we are progressing?
<b>Achieve excellence in health and safety:</b>				
Reach zero fatalities for our employees and contractors by 2020.	2020	26	24	Road transport remains a key risk to be managed. As most deliveries are outsourced, implementation of this new KPI is still in progress.
60% reduction in the number of road incidents per million km against a 2013 baseline.	2020	Employees: 0.69 Contractors: 0.09	Employees: 0.68 Contractors: 0.15	
Virtually eliminate lost time incidents for our employees and contractors by 2020.	2020	0.49	0.49	Plateau in performance requiring refocused actions
<b>Enhance access to senior management positions for women:</b> Ensure 35% of senior management positions are held by women by 2020.	2020	18.6%	19.2%	The number of female in senior positions has doubled in the last 10 years.
<b>Support local communities projects through volunteer work:</b> Contribute 1 million volunteer hours annually to locally selected projects by 2020.	2020	57,000	118,000	Volunteering contributing to a balance between financial and non-financial support.
<b>Be a driver of local socio-economic development:</b> Ensure 75% of country operations implement a plan with targets for local job creation by 2020.	2020	37%	44%	Deployment being led by units in emerging countries
100% of sites to implement stakeholder engagement plans.	2020	20%	29%	Increased engagement at larger sites across Group
<b>Ensure Supply Chain is in accordance with UN Global Compact principles:</b> Use a risk based approach (country/commodity/company profile) to identify a population of suppliers for more detailed monitoring of performance and, where necessary, work with suppliers on remediation plans. Target: 80% of spend to assess sustainability	2020	10%	25%	The first third-party assessments have been done on our largest suppliers

(1) Quarries within 0.5 km of IUCN I - VI, Ramsar, IBA, Natura 2000, World Heritage Sites - G4-EN11 / (2) Quarries within 0.5 km of local biodiversity sensitive area, quarries with protected species or quarries with naturally occurring caves. / (3) The 2020 target was fixed based on the 2010 reference value of 31.7 mg per ton of clinker to which a 30% reduction target was applied to reach a targeted internal benchmark. The 31.7 mg/ton reference value was published in the 2012 Sustainability Report. Using the standard methodology for adjusting scope for acquisitions and divestitures, the mercury emission rate was 20.6 mg/ton in 2010, 21.4 in 2011 and 19.8 in 2012 / (4) G4-EN2. / (5) G4-EN7.

**Lafarge Malaysia Berhad** (1877-T)  
Level 12, Bangunan TH Uptown 3  
No. 3, Jalan SS21/39  
47400 Petaling Jaya  
Selangor Darul Ehsan, Malaysia  
Tel 603-7723 8200  
Fax 603-7722 4100  
[www.lafarge.com.my](http://www.lafarge.com.my)

