



The Climate Savers Programme

Capping emissions in the cement sector: The Case Study of Lafarge

1. Background

WWF has established its Climate Savers Programme to cooperate with major corporations prepared to make innovative efforts to mitigate climate change as part of their corporate responsibility. The Program demonstrates profitable and practical approaches to reducing CO₂ emissions and supports business efforts to implement carbon management strategies. The Climate Savers Program reduces greenhouse gases by working with companies to identify and undertake measures to reduce emissions. Members of the program share information and expertise on making significant improvements in energy efficiency and in increasing use of renewable energy.

WWF is convinced that measures aiming at the improvement of the efficiency of resource use and the reduction of CO₂ emissions is entirely compatible with the aim of improving shareholder and stakeholder value.

To date WWF closed such climate savers agreements with multi-national companies like Johnson & Johnson, IBM, Nike, Polaroid, Collins Pine and [Lafarge](#).

2. Lafarge and WWF

With 85,000 employees in 75 countries, Lafarge is the largest cement manufacturer in the world and a world leader in the manufacturing of building materials. In the past years the company started to integrate sustainable development principles into its management and production processes.

Lafarge has become a WWF Conservation Partnership in 2000. Based on this experience both sides started to explore opportunities to collaborate on climate change issues in early 2001.

Emissions from Lafarge's global cement activities in 2000 amounted to 77 million tons of carbon dioxide – exceeding the national emission levels of countries like Austria or Portugal.

During the course of 2001 Lafarge and WWF discussed possible elements of a Climate Protection Commitment. An independent consultant specialised on climate change issues, facilitated these efforts.

WWF and Lafarge jointly agreed on company specific modalities of the partnership and a set of emission reduction targets to be reached through complementary action in four focus areas. In October 2001 Lafarge joined the WWF Climate Savers Program accepting ambitious emission reduction targets for more than 10 years into the future.

3. Focus areas and targets

Lafarge and WWF identified four focus areas in which most of the action aiming at emission reduction will take place:

a) Best practice energy efficiency is applied in new or refurbished plants; in existing plants such practices will be incrementally applied.

A cement company like Lafarge can accelerate the upgrade of its existing plants and set more stringent targets for the energy efficiency of new plants – in most cases involving significant additional investments. Therefore this type of measures on a voluntary basis is limited in scope. It is important to keep in mind that cement production is a very energy intensive process and that installations are very long-lived. Manufacturers therefore carefully balance investments against future fuel costs in order to minimise costs per unit of final product over the lifecycle of the plant.

b) Increasing the amount of renewable electricity purchased for the production and office demand.

The purchase of green electricity is likely to become increasingly common within the Lafarge Group and will make its contribution to reducing emissions wherever incremental costs are acceptable.

c) Reduction of clinker use by substitution with cementitious materials

To reduce the content of the energy and emissions intensive clinker in its final product probably is the most powerful way to mitigate emissions of a cement company. To pursue this objective, however, requires close cooperation with customers, who need to adapt to modified working practises with a modified cement.. Occasionally technical standards and legal requirements make it difficult to make the required changes to the product. In other cases limited supplies of the required additives (e.g. fly ash or blast furnace slag) can be the limiting factor despite wide acceptance by customers.

d) Reduction of fossil fuel use by substitution with alternative fuels

A fourth way of reducing greenhouse gas emissions can be to substitute a part of the fossil fuels used in the cement kiln by alternative fuels. Currently, main alternative fuels that are burnt by Lafarge consist of so-called "waste fuels" (e.g. car tyres, used engine oil, spent solvents). Concerns about environmental drawbacks of this practise have led to exclusion of this type of reductions from the targets endorsed by WWF. In order to develop a constructive solution Lafarge and WWF agreed to develop a strategy to increase use of biomass fuels from sustainable sources.

These four fields basically reflect the main pillars of Lafarge's greenhouse gas reduction strategy.

Under the Climate Savers Partnership Lafarge has committed itself to two types of quantitative targets: output-related targets and absolute reduction targets. This combination of both target types combines environmental effectiveness for the industrialised countries and flexibility for the growing economies of the developing world.

Clear rules were defined in the agreement between WWF and Lafarge on how to take into account the effects of acquisitions, divestures, and plant closures as well as the import or export of cement clinker between the key regions.

Consistent to the Kyoto Protocol, 1990 was chosen as the base year. The targets refer to the average emissions occurring during the given timeframes.

The output-related reduction targets apply to all existing units across the globe:

2008-2012 : -20% tons CO₂/ton output

Figure 1 illustrates how this target is composed of a reference ("business-as-usual") and an additional effort made by Lafarge according to its commitment.

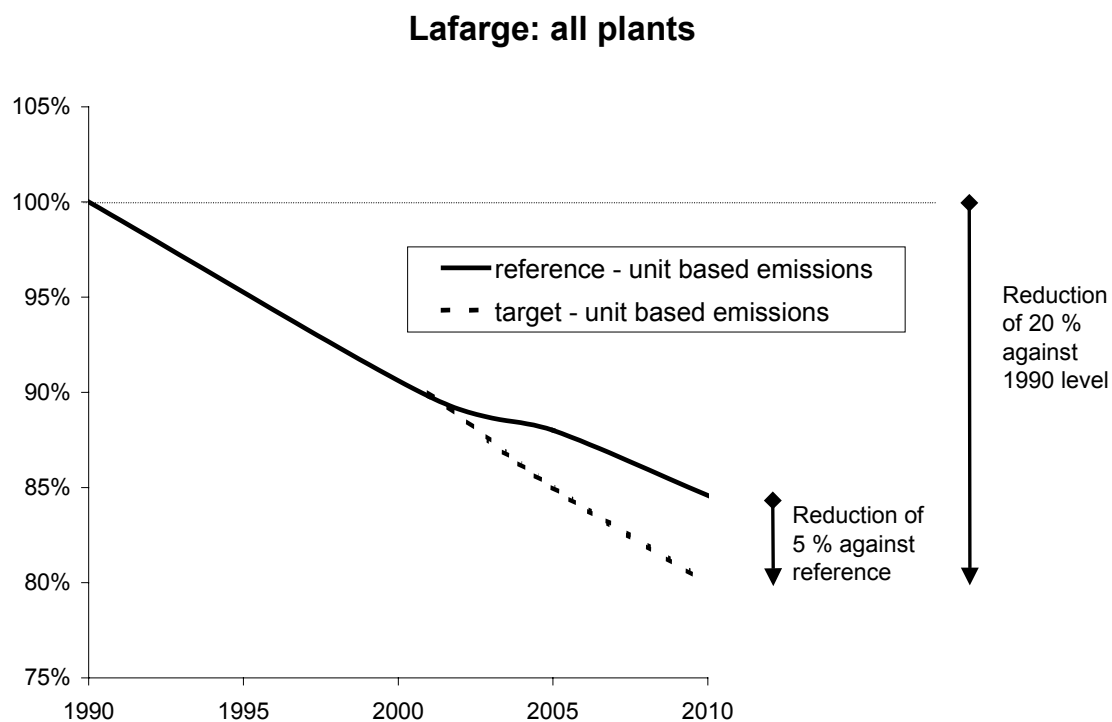


Figure 1 Percentage reductions of unit based emissions against the 1990 level of all Lafarge plants. Emissions strongly declined between 1990 and 2000. Lafarge's commitment under the Climate Savers Partnership is expected to lead to a continuation of this trend despite saturation effects.

The absolute reduction targets apply to the emissions of units in Annex-I countries, i.e. countries with a emission reduction commitment under the Kyoto Protocol:

2008-2012: -10% of CO₂

Figure 2 shows how the target for this unit-based indicator is comprised of a reference ("business-as-usual") reduction and an additional effort. The absolute target translates into an annual reduction of roughly 5 million tons of CO₂ against 1990 level by 2010 or about 2 million tons against the reference emissions for 2010.

Lafarge CO₂ emissions: Annex I Plants

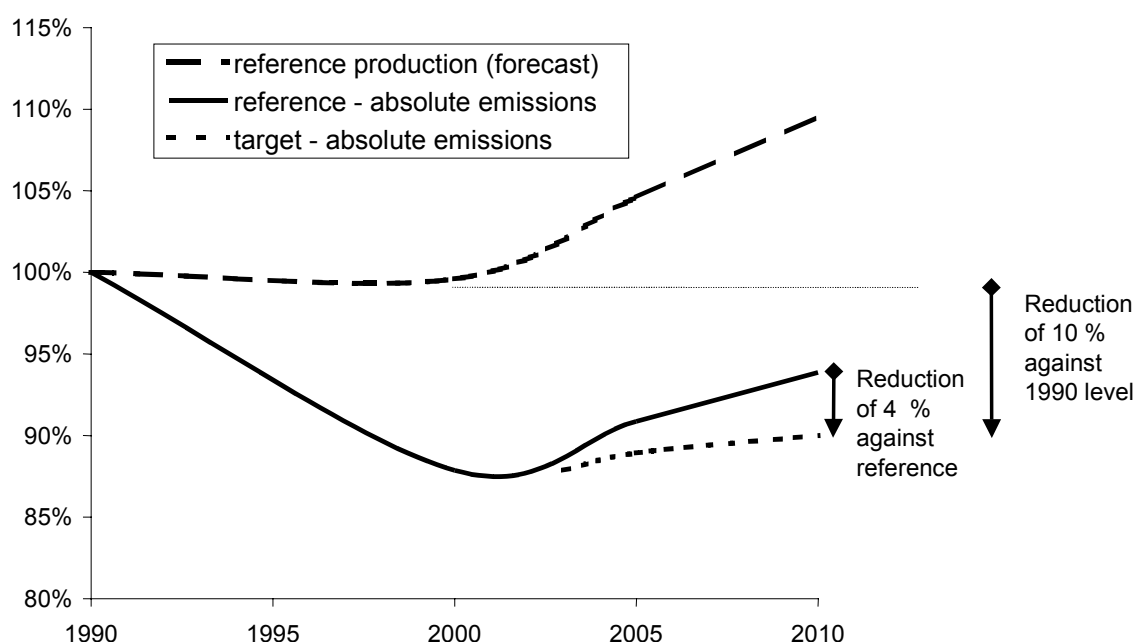


Figure 2 Percentage reductions of absolute emissions against the 1990 level of all Lafarge plants in Annex 1 countries. Emissions declined between 1990 and 2000. Lafarge's commitment under the Climate Savers Partnership is expected to lead to a stabilisation of emissions from plants in industrialised countries until 2010 despite a 10% growth in production.

In pursuing its targets – which are part of a larger strategy to prepare the company for a carbon constrained world - Lafarge is currently making significant efforts to communicate its commitment to its employees. Lafarge is also training key people on the technical level of each plant to be able to integrate climate change related issues into their daily business.

4. Monitoring and Verification

The credibility of corporate reduction commitments under WWF's Climate Savers Programme relies on binding requirements on the monitoring and independent third party verification.

The existing corporate environmental and energy reporting system of Lafarge was adapted to provide accurate information about CO₂ emissions on the corporate and installation level. Annual emissions are determined for the various sources – e.g. the production of clinker or cement or electricity consumed - based on the emission monitoring protocol developed for the cement industry by the World Business Council for Sustainable Development (WBCSD) and the World Resource Institute (WRI).

The monitoring system implemented by Lafarge was subject to an audit by an independent auditor (Ecofys) in order to ensure that complete, transparent and accurate Emissions reporting. Compare Figure 3 for one result of the audit process.

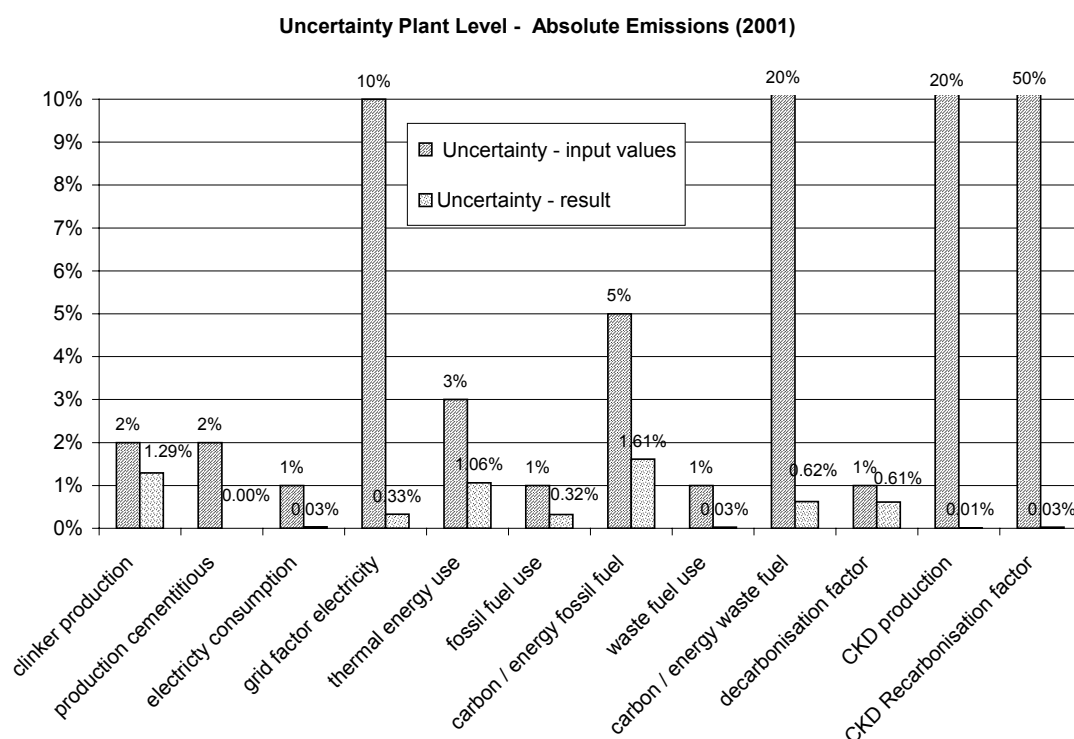


Figure 3 One of the results of the first validation audit: an analysis of the impact of the uncertainty of different input parameters on the calculated emission value of a plant. Absolute emissions of an average plant within the Lafarge group are found to exhibit an uncertainty of $\pm 3\%$ in 2001 – an excellent value in comparison to other installations.

A validation of annual emission data including the reference year 1990 is carried out annually by the independent auditor who is checking the correctness and consistency of the reported data. This way Lafarge and WWF have a reliable indicator to demonstrate progress towards the target.

5. Benefits

Companies like Lafarge who participate in WWF's Climate Savers Programme have a number of tangible advantages:

- The dialogue with WWF's experts on climate change significantly helps to develop a balanced corporate greenhouse gas strategy.
- The company enters a process of capacity building to address climate change issues. The respective motivation and involvement of employees increases considerably.
- The company starts to create the necessary knowledge required to fulfil its obligations arising from different emission trading systems (e.g. in the EU) or other regulations concerning greenhouse gas emission reductions.
- A cost effective and accurate greenhouse gases monitoring and reporting system is smoothly established relying on the existing management reporting system.
- A credible documentation of early action mitigating corporate emissions is ensured.
- The company obtains a robust instrument to demonstrate compliance with national voluntary agreements.
- The company progresses in enhancing its internal and external communication on climate change.
- The company demonstrates leadership within its sector.
- Membership in the Climate Savers Programme can also help to strengthen customer relationship by demonstrating corporate responsibility within a credible framework.

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