

## Fact Sheet - Alternative Fuels & Raw Materials (AFR)

### Introduction

Cement production is characterized by an extremely high-temperature combustion process (up to 2000°C flame temperature), necessary for heating and fusing the raw materials. The traditional fossil fuels most commonly used in this combustion process are coal, heavy fuel oil or gas.

Substitution of these fossil fuels by alternative, waste derived fuels is a common practice in the cement industry in many parts of the world. The nature of the production process makes it eminently suitable for this purpose - by ensuring full energy recovery from various wastes under appropriate conditions. Any solid residue from the waste then becomes a raw material for the process and is incorporated into the final cement clinker.

Sometimes, waste can also be used to substitute raw materials in the process, thereby also conserving the natural resources generally used in the manufacture of cement.

### Why this issue is important

Waste is an important issue for society - as an example, Europe alone produces more than 350 million waste tires per annum. Recycling and disposal options for many waste materials and industrial by-products are often limited - used tires is but one example.

Where recycling is not possible, incineration or landfill is the most common disposal practice available for many wastes. However, by using waste as an alternative fuel or raw material in the cement-making process, there are benefits for society as well as the cement maker. For Holcim, it represents an important business opportunity because it reduces fuel costs and CO<sub>2</sub> emissions. By dealing safely with wastes that are often difficult to dispose of in any other way, we are able to provide an important service to society.

### Challenges for Holcim

Because cement-making is such an energy and resource-intensive process, efficient use of natural resources is an important cornerstone of our environmental policy. We are therefore committed to using secondary materials (waste and industrial by-products) in place of natural resources wherever possible.

However, this strategy is not without its challenges. Not every waste is suitable in our process. In addition, we must ensure that we do not increase our atmospheric emissions by using a particular waste, nor impact product quality. At the same time, a key objective of our AFR use is to achieve reductions in CO<sub>2</sub> emissions.

Meanwhile, stakeholder debate continues over the use of AFR in cement kilns. Some stakeholders are concerned about potential health or environmental impacts from the handling and combustion of alternative fuels. Others are concerned that our product quality could be compromised. It has also been claimed that the use of waste and by-products as fuels actually perpetuates the production of these wastes, by offering a legal, cost-efficient solution to disposal. However, other stakeholders are pleased by the 'win-win' possibilities of cutting GHG emissions and disposing of wastes by using AFR. It is therefore a challenge for Holcim to manage stakeholder expectations and provide assurances to demonstrate our responsible use of these waste materials.

## **Our commitment**

The principles of our environmental policy commit Holcim to the promotion of eco-efficiency, the conservation of non-renewable natural resources and the recycling of secondary materials.

More specifically, since 2002, Holcim operations have been guided by our AFR policy. The policy governs the co-processing of waste-derived materials at Holcim cement plants and also covers Holcim facilities where selected waste streams are pretreated for recovery in our cement kilns. It is a tool for corporate governance, business risk management, communication, and improved environmental performance. The policy's nine principles are supported by definitions and rules, and are backed by manuals detailing engineering, quality, and health and safety guidelines.

Holcim is confident that our use of AFR is responsible and contributes to sustainable development goals. We have carried out detailed technical work to ensure that there is no adverse effect on public health, the environment or product quality from our use of AFR. As part of our engagement with the Cement Sustainability Initiative (CSI), we subscribe to its Fuels and Raw Materials Guidelines. Furthermore, our strategic alliance with the German Technical Cooperation (GTZ) has led to the development of global guidelines on the co-processing of waste in the cement industry – launched in July 2006.

Guided by our environmental policy and principles, we are therefore committed to increasing our use of these waste materials.

Worldwide, around 80% of the alternative fuels we use are waste oils and non-hazardous wastes such as used tires, plastic, wood, sewage sludge and others. In Western Europe, where over 50% of the waste we use is industrial waste, we increasingly use hazardous waste derived fuels, such as solvents, paints and tank-bottom sludges.

### **Related publicly available information**

Holcim publishes Corporate Sustainable Development Reports (CSDRs) each second year, with performance information and data updated annually on our website. Together with additional fact sheets and other SD-related information, this can be found at:

[www.holcim.com/sustainable/](http://www.holcim.com/sustainable/)

More information on the CSI, including the Battelle Report mentioned above, is available at:

[www.wbcdcement.org/](http://www.wbcdcement.org/)

For more information on Guidelines on Co-processing Waste Materials in Cement Production (GTZ Guidelines) see:

<http://coprochem.ecs.ch>