

## Editorial

### The cement industry's commitment to reduce CO<sub>2</sub> emissions in the context of the COP 21 (Paris 2015)

Against the backdrop of the COP 21 held in Paris from 30 November to 11 December 2015, the cement industry has introduced a road map for lowering CO<sub>2</sub> emissions by around 20–25% in 2030. That will call for global involvement, for countries such as China account for 60% of worldwide production, compared to just 4% in all of Europe.

The cement industry acknowledges the importance of the active participation of all CO<sub>2</sub> emitters in this objective. That would include the firm involvement of the electricity, transport and housing industries. It also proposes that the relative benefits of energy efficiency and lower CO<sub>2</sub> emissions in cement-derived products be recognised, primarily the capacity of concrete, as the main such product, to lower emissions. Consequently, the reduction of CO<sub>2</sub> emissions and energy efficiency should be considered together. Similarly, a distinction should be drawn between the CO<sub>2</sub> emitted during the process and the gas generated by combustion.

CEMBUREAU, the European Cement Association, has drawn up an action plan in line with the 2 °C ceiling rise in the worldwide temperature, which will entail lowering the carbon footprint by 32% in 2050 relative to 1990. In the context of a **low-carbon economy** in response to **climate change**, the industry's role can be summarised in five lines of action:

- improving resource efficiency: use of alternative fuels and decarbonated raw materials, replacement of clinker with additions, development of new cements and enhancement of transport efficiency
- raising thermal and electrical energy efficiency
- implementing carbon capture and reuse systems
- developing energy-efficient concretes
- studying and considering the sustainable features of building products (concrete recycling, recarbonation and intelligent infrastructures).

Thermal energy consumption is known to generate 35% of the cement industry's CO<sub>2</sub> emissions. According to today's estimates, by 2050 the European cement industry will be using 60% alternative fuels, for a 27% decline in emissions from the present values.

In another vein, the conversion of limestone, the abundant core material in portland cement, into lime during manufacture accounts for 60% of the cement industry's emissions. The use of other high calcium raw materials must therefore be sought to replace it.

The present European clinker/cement ratio, 73.7%, is expected to drop to 70% by 2050, for a 4% decline in CO<sub>2</sub> emissions. The study and use of new constituents in portland cement is a solution that holds considerable promise.

The development of new cements with lower CO<sub>2</sub> contents, such as calcium sulfoaluminate and belite cements, among others, could lower emissions by 5% in 2050.

Road transport is another substantial source of emissions. CEMBUREAU estimates show that shifting 50% of today's road transport to modes that emit less GHGs, such as rail or sea, would lower the related emissions significantly.

Energy efficiency, in turn, is one of the cement industry's strategic aims, given its energy-intensive characteristics. The Spanish cement industry, for instance, is one of the few sectors in Spain that has complied with the requirement to conduct **energy efficiency audits within the 5 December 2015 deadline**, further to Directive 2012/27/EU of the European Parliament and of the Council of 25 October 2012 on energy efficiency, amending Directives 2009/125/EC and 2010/30/EU and repealing Directives 2004/8/EC and 2006/32/EC, which creates a common framework for furthering energy efficiency in the European Union.

Lastly, attention should be drawn to the work underway by a group of the world's cement majors under the umbrella of the *World Business Council for Sustainable Development (WBCSD)*, which has also presented a series of proposals in line with the foregoing. The project known as the *Low Carbon Technology Partnerships initiative (LCTP<sub>i</sub>)* seeks to lower CO<sub>2</sub> emissions by one million tonnes (20–25%) before 2030, a figure equivalent to Germany's total present CO<sub>2</sub> emissions.

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