



Plans for Future Generations

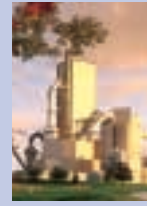
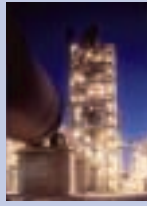


Concrete
Thinking
for a sustainable world



Portland Cement Association

CMS Program



Members of the Portland Cement Association (PCA) believe that operating responsibly in line with society's expectations is key to the industry's long-term success. PCA member companies in the United States, which include 45 companies operating 101 plants in 35 states, are committed to managing their operations in a way that contributes to sustainable development – the belief that business development can meet the needs of the present without compromising the ability of future generations to meet their own needs.

Cement Manufacturing Sustainability Program

To put its commitment to sustainable development into consistent, tangible actions, PCA has developed the Cement Manufacturing Sustainability Program. The goal of the program is to balance society's need for cement products with stewardship of the air, land, and water, conservation of energy and natural resources, and maintenance of safe work places and communities. The centerpiece of the program is a voluntary code of conduct, which is a set of principles, performance measures, and a reporting protocol, designed to guide decision making, business practices, and operating performance in a sustainable fashion.

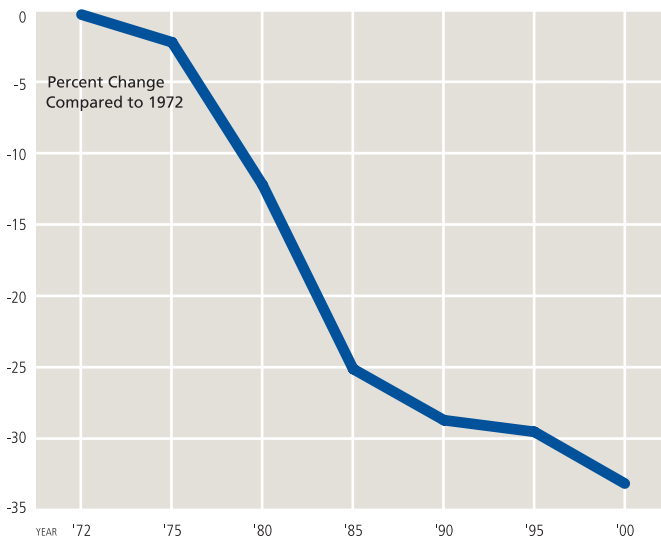
The balance between economic, environmental, and social interests is at the heart of sustainable development. Through the Cement Manufacturing Sustainability (CMS) Program, PCA has made sustainable development an integral part of the industry's approach to business.

Principles

The PCA Board of Directors in 1991 adopted seven principles that call on member companies to meet market demands while using environmentally responsible practices that minimize emissions, waste, energy consumption, and the use of raw materials. Taken together, these principles help manufacturers to integrate the economic, social and environmental dimensions of cement manufacturing, and to find a balance between short-term priorities and long-term needs.

- I.** The safety and health of our employees, our neighbors, and our customers is our first consideration in the production and distribution of a quality product.
- II.** We will continue to implement effective controls, which reduce or eliminate the release of pollutants to the air, to the land, and/or to the water.
- III.** We will actively seek ways to manage wastes in a responsible and environmentally sound manner.
- IV.** We will pursue effective improvements in energy efficiency and promote the conservation of resources.
- V.** We will seek ways to beneficially and safely utilize recyclable wastes as raw materials, fuels, and product components as part of our overall commitment to waste minimization and recycling.
- VI.** We will continue to conduct mining operations in a responsible and environmentally sound manner.
- VII.** We will participate with lawmakers, regulators, and other interested parties in the development of rational and effective health, safety, and environmental laws and regulations.

Energy Consumption



Since 1972, the cement industry has improved energy efficiencies by 33 percent. According to the Department of Energy, U.S. cement production now accounts for only 0.33 percent of U.S. energy consumption.

Reference: U.S. and Canadian Labor-Energy Input Surveys, Portland Cement Association, Skokie, IL, USA, Various Years

Environmental Performance Measures

The Environmental Performance Measures translate the CMS Program Principles into action. A long-term reduction target is identified for each key performance measure and then progress toward that target is measured against a baseline.

PCA has developed reduction targets for carbon dioxide emissions in the context of a three-part climate change program. A reduction target has also been established for cement kiln dust — a byproduct of cement manufacturing. PCA is currently considering additional reduction targets, including one addressing plant-level implementation of environmental management systems.

Mission Statement

To meet the rising demand for portland cement through environmentally and socially responsible business practices that use state-of-the-art technologies to continuously minimize emissions, promote a safe workplace, improve energy efficiency and conserve natural resources, and cost-effectively produce a high-quality product.

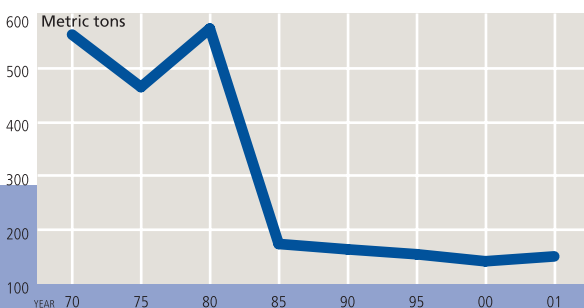
Vision

- Environmental and societal interests are given the same weight as economic interests, and together are an integral part of business decisions, practices, and operations.
- The health, safety, and welfare of our employees and the communities in which we live and work are essential components of cost-effective manufacturing, distribution, and use, and are integral to all business decisions.

Current Targets

- **Carbon dioxide** – The U.S. cement industry has adopted a voluntary target of reducing CO₂ emissions by 10 percent (from a 1990 baseline) per ton of cementitious product produced or sold by 2020.
- **Cement kiln dust** – The U.S. cement industry has adopted a voluntary target of a 60 percent reduction (from a 1990 baseline) in the amount of cement kiln dust disposed per ton of clinker produced by 2020.

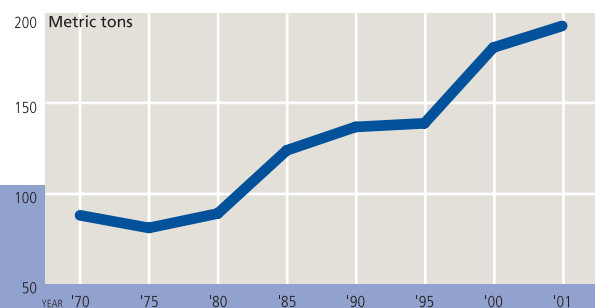
Emissions of Sulfur Dioxide (SO₂)



Process controls and plant modernizations have dramatically reduced emissions of sulfur dioxide, a gas associated with acid rain, regional haze, and particulate formation.

Emission Data Reference: Current Emission Trends Summaries, United States Environmental Protection Agency Washington, DC, USA, August 2003

Emissions of Nitrogen Oxides (NO_x)



Emissions of nitrogen oxides, a precursor to ozone formation and regional haze, have risen along with cement-manufacturing capacity.

Emission Data Reference: Current Emission Trends Summaries, United States Environmental Protection Agency Washington, DC, USA, August 2003

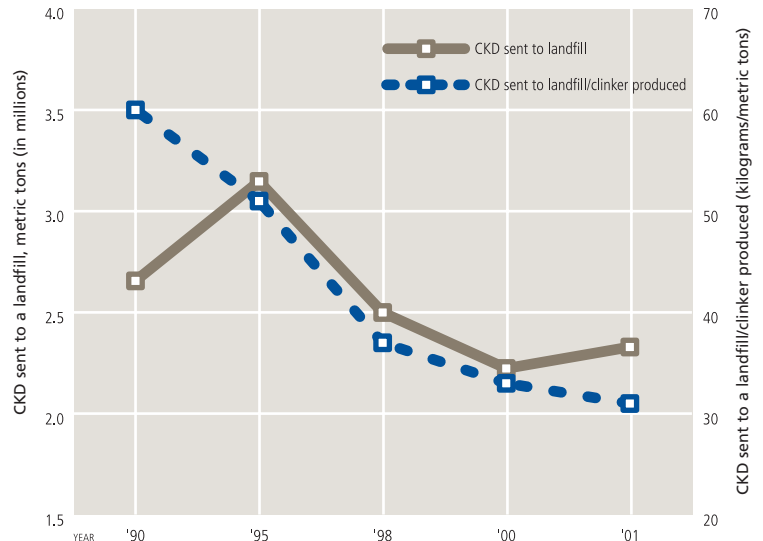
Reporting Protocol

PCA has conducted an annual survey of members since 1970 to collect data and compare it against a baseline to measure performance toward reduction targets on energy use and labor practices. This tool has been modified to collect information on the targets identified above. In 2004, PCA will report on these results and other issues in its inaugural Sustainable Development Report.

Occupational Health and Safety Program

PCA's commitment to health and safety supports the principles of the Cement Manufacturing Sustainability Code. By setting high standards for health and safety as well as rewarding companies that install innovative technologies, PCA is raising the bar to foster the best safety culture and infrastructure for the industry. The health, safety, and welfare of our employees and the communities in which we live and work are essential components of economic, environmental, and societal factors by which the sustainability decisions are weighed.

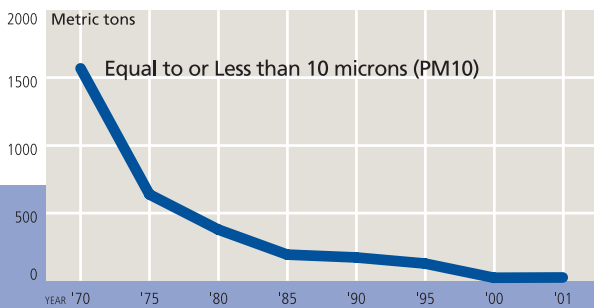
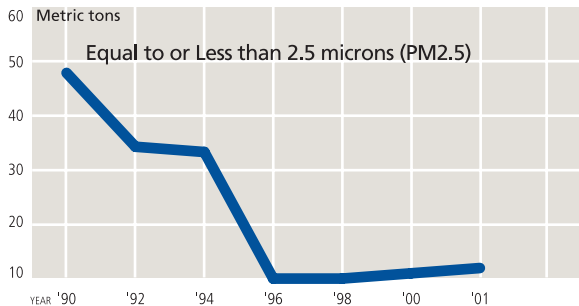
Cement Kiln Dust (CKD) Production



The industry recycles more than 75 percent of cement kiln dust—a byproduct of the manufacturing process—directly back into the cement kiln, reducing the need for limestone, raw materials, and energy.

Reference: Cement Kiln Dust Surveys, Portland Cement Association, Skokie, IL, USA, Various Years

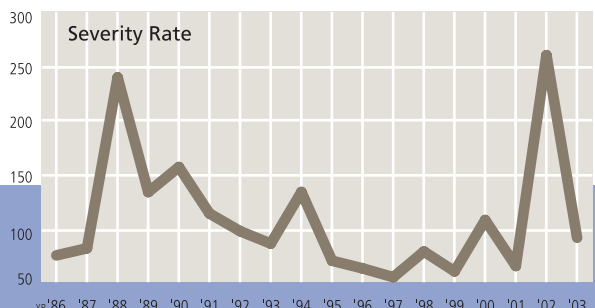
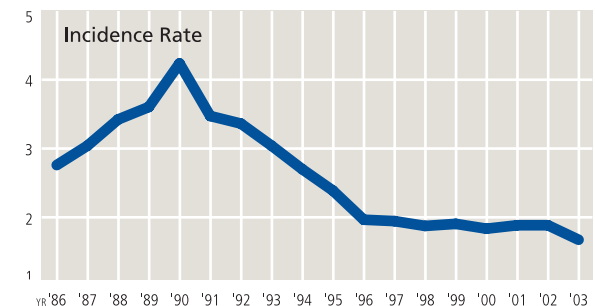
Emissions of Particular Matter (PM)



Effective pollution control equipment has nearly eliminated emissions of particulate matter.

Emission Data Reference: Current Emission Trends Summaries, United States Environmental Protection Agency Washington, DC, USA, August 2003

Accident Experience Summary



The cement industry has an enviable safety record in terms of both the incidence rate, a measure of accident frequency, and the accident severity rate, measured by time lost per accident.

Reference: Annual Safety Survey, Portland Cement Association, Skokie, IL, USA, Various Years.

Health and Safety

PCA's Occupational Health and Safety Program contains several elements, including two awards programs. One recognizes specific innovations and actions that enhance a facility's safety culture and infrastructure. The other highlights outstanding safety records.

In addition, PCA has prepared a series of safety information advisories (SIAs) addressing health and safety topic areas of importance to cement manufacturers. The intent of the SIAs is to provide both corporate and plant level health and safety professionals with tools to enhance existing programs. Thus far, SIAs have been completed on the following topics: rail car loading/unloading, contractor safety, lockout/tagout, and machine guarding.

Safety Award Categories

- Safety Commendation
(One Year w/o Lost Time Accident (LTA))
- Safety Honor (2-4 Years w/o LTA)
- Safety Excellence (5 or more years w/o LTA)
- Safety Merit (500,000 Hours w/o LTA)
- Safety Distinction (750,000 Hours w/o LTA)
- Safety Excellence (1,000,000 Hours w/o LTA)
- Major Safety Improvement (50-75% LTA Improvement)
- Outstanding Safety Improvement
(Greater than 75% LTA Improvement)



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CEMENT INDUSTRY ENVIRONMENT AND ENERGY *Awards*

In support of the Cement Manufacturing Sustainability Program, PCA recognizes manufacturers that achieve superior environmental performance through an annual awards program. The awards, judged by an independent group of individuals from within other environmental organizations, federal agencies, media, and other industry sectors, address the following categories:

- Environmental Performance
- Land Stewardship
- Outreach
- Innovation
- Energy Efficiency
- Overall Environmental Excellence