

DEDICATED TO MAKING A DIFFERENCE

# The Cement Sustainability Initiative

A member-led program of the  
World Business Council For  
Sustainable Development



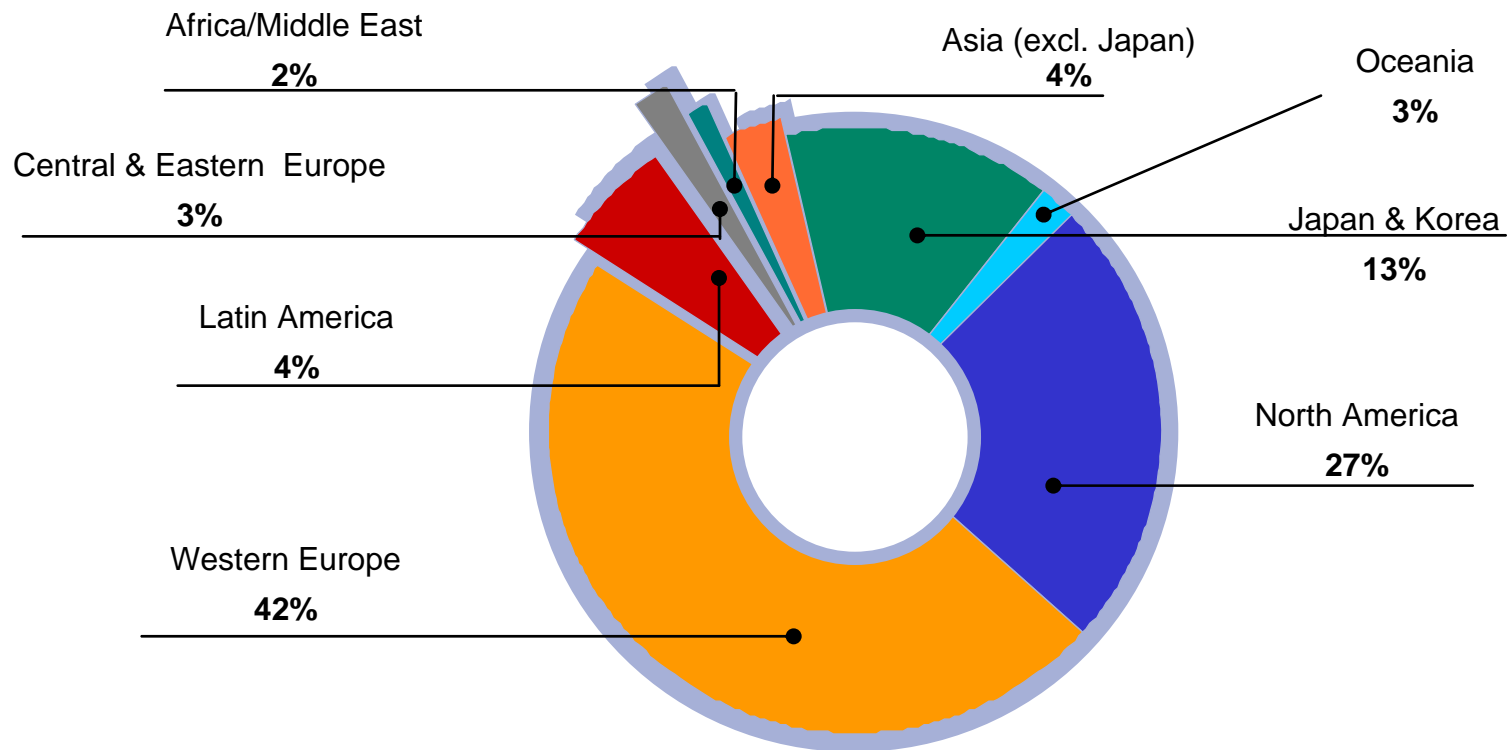
Howard Klee  
World Business Council for  
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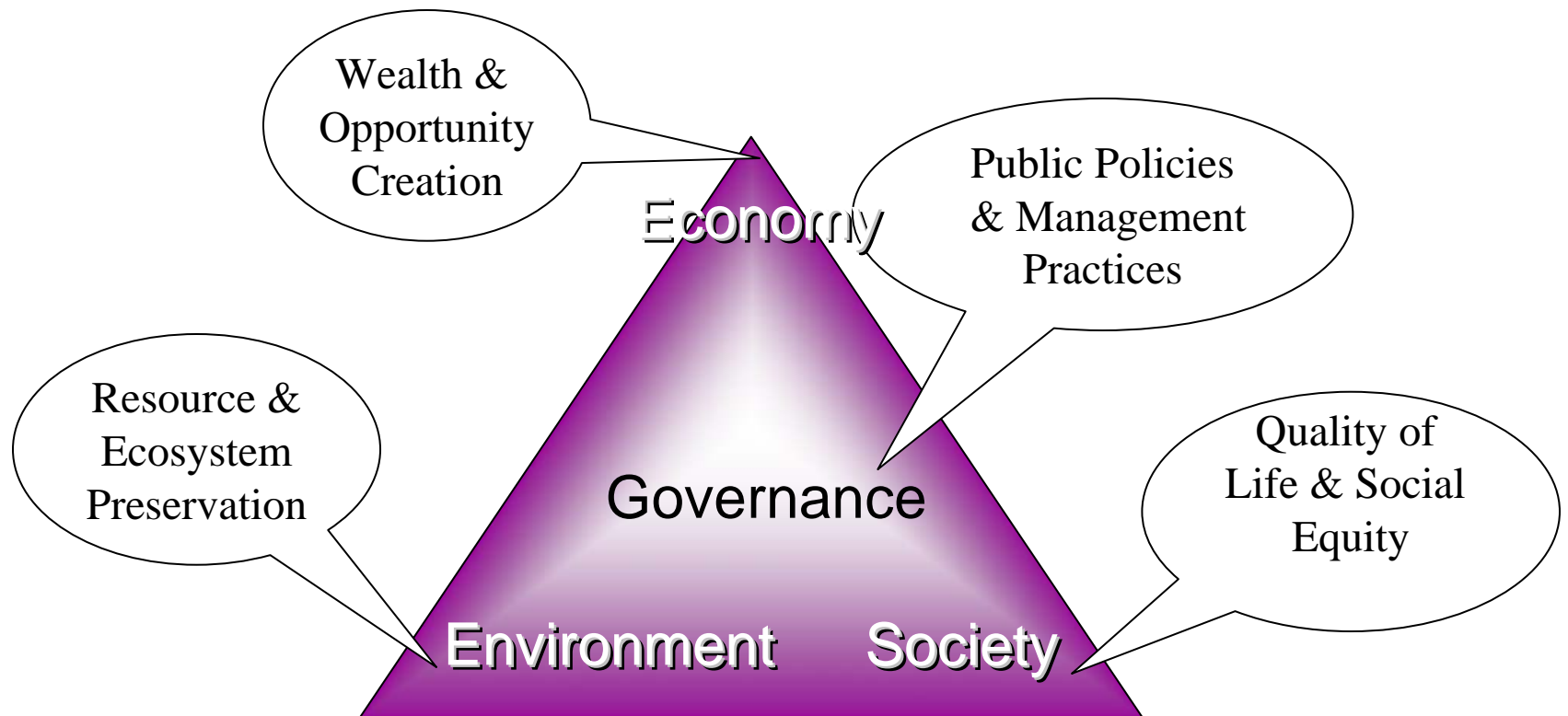
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# Membership by Region



# Sustainable Development



# The sustainable development “game”

How is it played?

How has it been played for cement.



# CSI Participants (with headquarters country)

- Ash Grove Cement (USA)\*
- Cemex (Mexico)
- Cimentos Liz (Brazil)\*
- Cimentos Molins (Spain)
- Cimpor (Portugal)
- CRH (Ireland)\*
- Grasim Cement (India)\*
- HeidelbergCement (Germany)
- Holcim (Switzerland)
- Italcementi (Italy)
- Lafarge (France)
- Portland Valderrivas (Spain)
- Secil (Portugal)\*
- Shree Cement (India)\*
- Siam Cement (Thailand)
- Taiheiyo (Japan)
- Titan (Greece)\*
- Votorantim (Brazil)

\*New Member since 2002



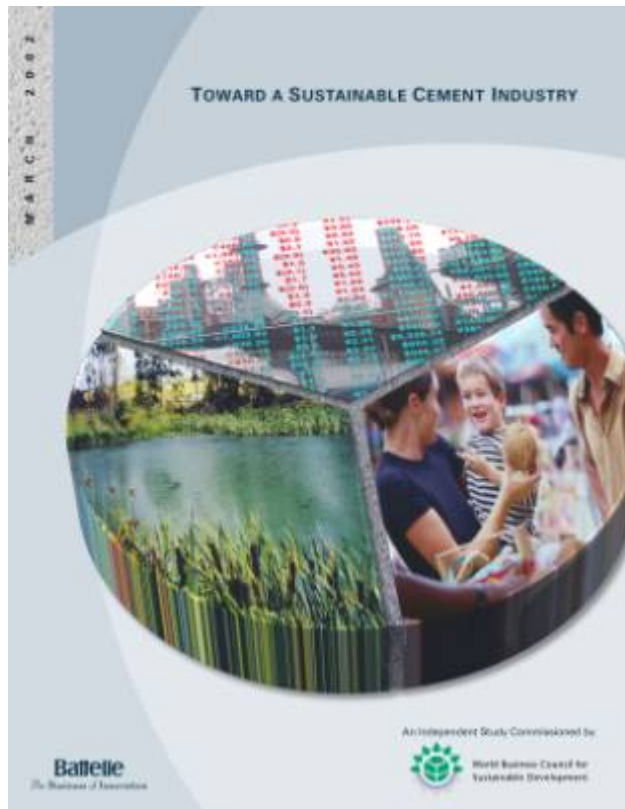
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Collectively, participants have operations in more than 70 countries

# Typical Sector Project - 3 phases

*Independent Study*

1999 - 2002



*Planning*

2002



*Action*

2002 - 2020

Individual implementation



Joint projects

+

Communication and outreach



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All reports available on the CSI website, [www.wbcscement.org](http://www.wbcscement.org)

# Work Program

## Early Work

Identifying impacts

Identifying solutions that minimize impacts

Defining metrics – key performance indicators

## Recent and Future Work

Public reporting

Identifying benefits

Identifying opportunities

International outreach

No group targets



# Summary of the Agenda for Action

## Joint projects to develop :

- guidelines,
- best practices,
- reporting and monitoring systems

## Individual company actions

- commit to SD
- implement guidelines
- publish emissions
- Set targets and report progress

## In six key areas

- Climate protection
- Fuels and raw materials use
- Employee health and safety
- Emissions reduction
- Local impacts on land and communities
- Communications and progress reporting



# Defining Good Practice

Cement sustainability initiative (CSI)

## Our Guidelines



Available on  
CSI website

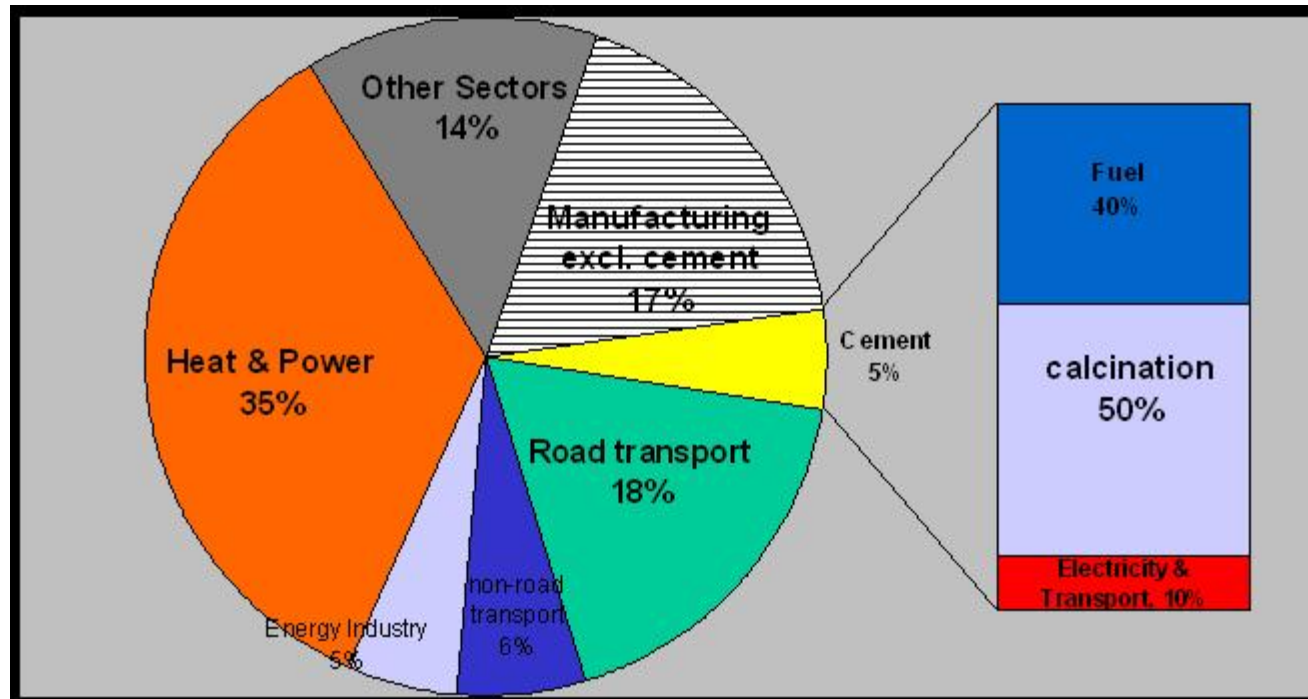
1. Updated and improved **CO<sub>2</sub> accounting and reporting**
2. Developed guidelines for the **responsible use of fuels and materials** in cement kilns.
3. Developed a consistent set of **safety metrics**.
4. Developed a collection of good practice examples for **Health and Safety management**.
5. Prepared a protocol for **emissions monitoring and reporting**
6. Developed a tailored set of guidelines for **environmental and social impact assessment** for the cement sector.



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# CO<sub>2</sub> and Climate Change

## Global Man-made CO<sub>2</sub> Emissions



**Total = 30 Gt CO<sub>2</sub> = 8 Gt carbon**

Source IEA, 2003.; Battelle, 2002.

- A major source of CO<sub>2</sub>
- Additional cost in a low-margin commodity business
- Significant financial impacts
- Some strategies available



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# Proactive approach to CO<sub>2</sub> Management

## JOINT WORK

- CO2 data protocol – common monitoring and reporting
- Good practices for use of fuels and materials
- CO2 data collection –
- Policy Work – Sectoral Approach to CO2 emissions management
- CDM Methodology

Inside a cement kiln, where temperatures reach more than 1400°C (2550°F).

## Individual company actions

- apply the measurement system
- Set emission reduction targets
- Report publicly on progress
- 3d party verification

Used plastic insulation to be used as an alternative fuel.



# Reducing CO2 Emissions

Less  
Limestone

Less **CO<sub>2</sub>**



+



=



Less Fuel

Less Clinker

Alternative  
Fuels



Additives

Slag

Fly Ash



Cement



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# Intense International Policy Discussions

- EU Emissions Trading System
- Kyoto and post-2012 world
- Failure of CDM
- European Union HLG
- Asia Pacific Partnership (AP6)
- G8 Response following Gleneagles
  - IEA Support
- Sectoral Emissions Management



# Another issue:

An urgent global need for proper, well-managed disposal of wastes



**Norway** Cement kilns used exclusively for hazardous waste destruction for more than 15 years.

**China** Cement kilns adopted as preferred destruction technique for improved waste management.



## Using Cement Kilns to Manage Waste Problems

- High temperature, long residence time
- Well controlled process
- Can safely process alternative materials with appropriate handling, training and safety procedures
- More than 10 million tons of Hazardous Wastes is co-processed in cement kilns annually
- Potential use to dispose of off-date pesticides (approx. 500 mil pounds worldwide)
- Potential to provide sound disposal option for many wastes in developing economies.



# Sustainability of Concrete Construction

- Scoping work in 2006 at request of CEOs
- Internal work + online stakeholder consultations (150 people, 18 countries)
- Identified three potential areas of interest to CSI companies



# Concrete – scoping work



## **Recommendations for Sustainability of Concrete in Construction**

- # 1: Image & Perception campaign**
- # 2: Recycling working group**
- # 3: Affordable housing initiative**



# Sustainability of Concrete:

## Image and perception

### Stakeholder Perception

- Energy intensive (cement vs. concrete)
- Resource intensive
- Noisy & dirty material
- Lack of innovation
- Low skill
- Aesthetics cold finish, poor design

### Industry View

- Low embodied energy
- Life cycle
- Summer comfort (inertia)
- Durable, resistant, safe
- Numerous innovations
- Affordable, available, creates jobs
- World class design exists

**Need to underline the contribution of concrete to sustainable development**



# Cooperative Work with Many

- **CEMBUREAU, UNEP, US EPA:** work on POPs emissions from cement kilns
- **Limestone Association of Japan:** work on Environmental and Social Impact Assessment
- **The Natural Step International:** work on use of fuels and materials
- **The World Resources Institute:** work on CO<sub>2</sub> accounting protocol
- **Cement Industry Federation (Australia), International Finance Corp, WWF, The Nature Conservancy:** review and comments on various guideline documents
- **The International Energy Agency, Asia Pacific Partnership,** work on CO<sub>2</sub> emissions, efficiency and benchmarking



# Summary: Positive contributions

- Responsible approach to addressing impacts of operation: fuels, safety, land impacts, CO2 and POPs emissions
- Responsible approach to climate policy
  - Providing data, analysis, and engagement
- Working with a broad range of stakeholders
  - Now seen as a source of reliable information
- Role of cement kilns in waste management
- International Outreach – China and India
- Evaluating concrete recycling issues



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

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

➤ global issues

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

➤ thoughtful engagement

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

➤ responsible voluntary action

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