

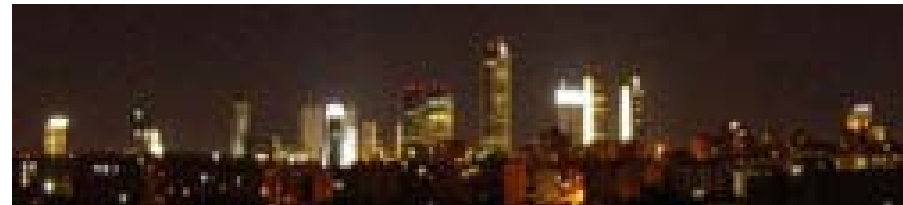
DEDICATED TO MAKING A DIFFERENCE

# The Cement Sustainability Initiative

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



World Business Council for  
Sustainable Development

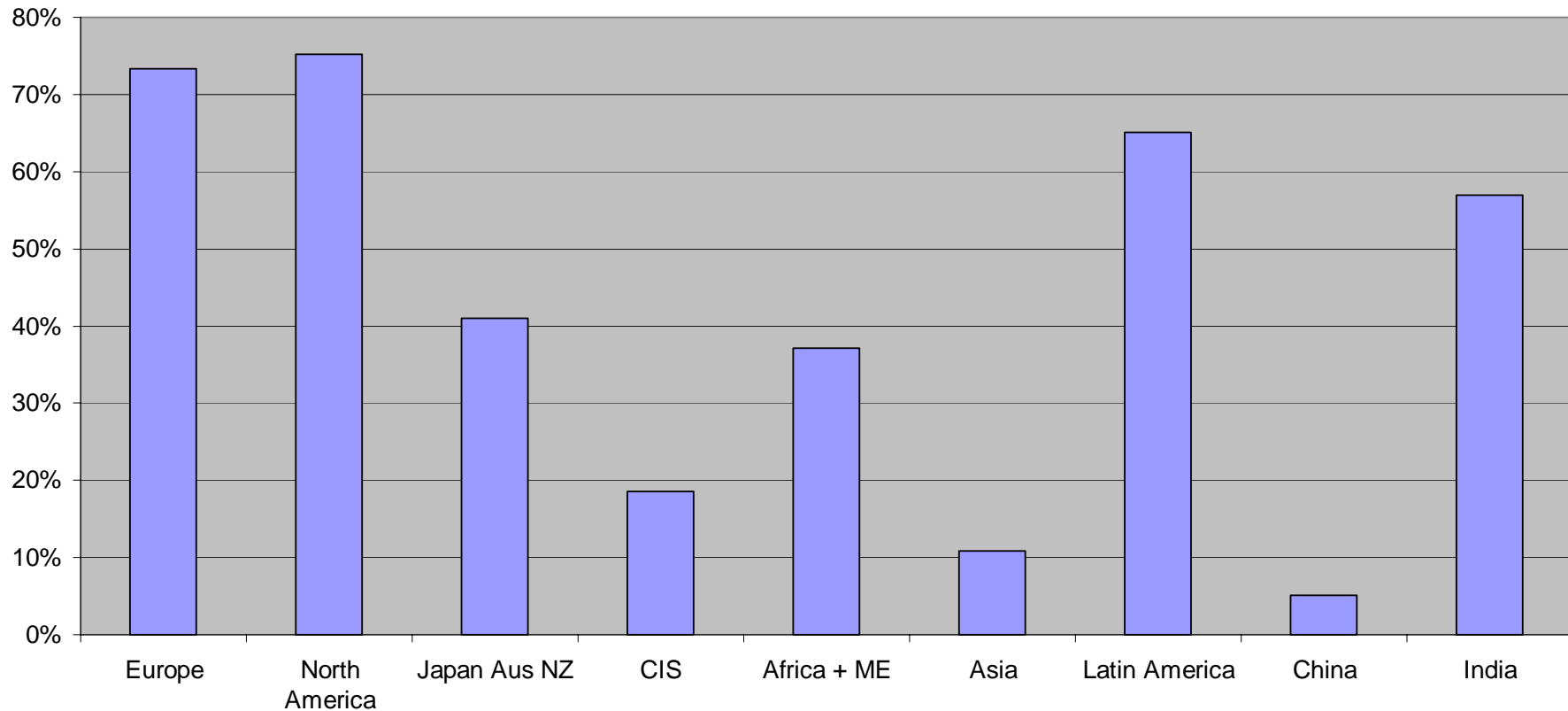


Workshop on sectoral approaches  
16 April 2008, Paris  
Olivier Luneau

# CSI participants: operating in more than 100 countries on the five continents



# Geographic Coverage – CSI 2005



Source of country data : USGS  
(Hydraulic cement, World  
production by country), see  
<http://minerals.usgs.gov/minerals/pubs/commodity/cement/>



# 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



# After the WBCSD / WRI CO<sub>2</sub> protocol, we have built a global database:

## INFORMATION

General Plant Information		1990	2000	2005
A1	Company			
A2	Coownership 1			
A3	Coownership 2			
B	Plant country			
C	Plant name			
D	Plant type			
E1	Plant description	kiln type		
E2		nominal capacity	[tpd]	

Clinker and Cement Production		1990	2000	2005
<b>Clinker:</b>				
8	Clinker production		[t/yr]	
21	Total cements + substitutes: Portland, Blended, Slag		[t/yr]	
21a	Total cementitious products		[t/yr]	

## CO<sub>2</sub> Emissions

Direct CO <sub>2</sub> Emissions		1990	2000	2005
<b>CO<sub>2</sub> from Raw Materials</b>				
35a	Calcination emission factor, corrected for CaO- and MgO imports		[kg CO <sub>2</sub> / t cli]	
39	Total CO <sub>2</sub> from raw materials		[t CO <sub>2</sub> /yr]	
<b>CO<sub>2</sub> from Kiln Fuels</b>				
41	CO <sub>2</sub> from alternative fossil fuels		[t CO <sub>2</sub> /yr]	
<b>CO<sub>2</sub> from Non-Kiln Fuels</b>				
45c	CO <sub>2</sub> from on-site power generation		[t CO <sub>2</sub> /yr]	

Direct CO <sub>2</sub> from Biomass Fuels (Memo Item)		1990	2000	2005
50	CO <sub>2</sub> from combustion of biomass fuels (kiln and non-kiln)		[t CO <sub>2</sub> /yr]	

## PERFORMANCE INDICATORS

Gross CO <sub>2</sub> Emissions (= total direct CO <sub>2</sub> ; all sources)		1990	2000	2005
59	Absolute gross CO <sub>2</sub>		[t CO <sub>2</sub> /yr]	
60	Specific gross CO <sub>2</sub> per tonne of clinker produced		[kg CO <sub>2</sub> /t cli]	
62	Specific gross CO <sub>2</sub> per tonne of cementitious product		[kg CO <sub>2</sub> /t cem prod]	

Net CO <sub>2</sub> Emissions (= gross CO <sub>2</sub> minus emission savings through alternative fossil fuels)		1990	2000	2005
71	Absolute net CO <sub>2</sub>		[t CO <sub>2</sub> /yr]	
73	Specific net CO <sub>2</sub> per tonne of clinker produced		[kg CO <sub>2</sub> /t cli]	
74	Specific net CO <sub>2</sub> per tonne of cementitious product		[kg CO <sub>2</sub> /t cem prod]	

Specific CO <sub>2</sub> from Indirect and Biomass Sources		1990	2000	2005
83	Specific CO <sub>2</sub> from biomass fuels (Memo Item)		[kg CO <sub>2</sub> /t cem prod]	

General Performance Indicators		1990	2000	2005
92	Clinker/cement factor in cements		[%]	
93	Specific heat consumption of clinker production		[MJ/t cli]	
95	Alternative fossil fuel rate (fossil wastes)		[%]	
96	Biomass fuel rate		[%]	
97	Specific power consumption		[kWh/t cement]	

## KILN FUELS - DETAILED INFORMATION

Kiln Fuel Consumption in tonnes per year		1990	2000	2005
108	Alternative fossil fuels (fossil wastes) : sum		[t/yr]	
115	Biomass fuels : sum		[t/yr]	



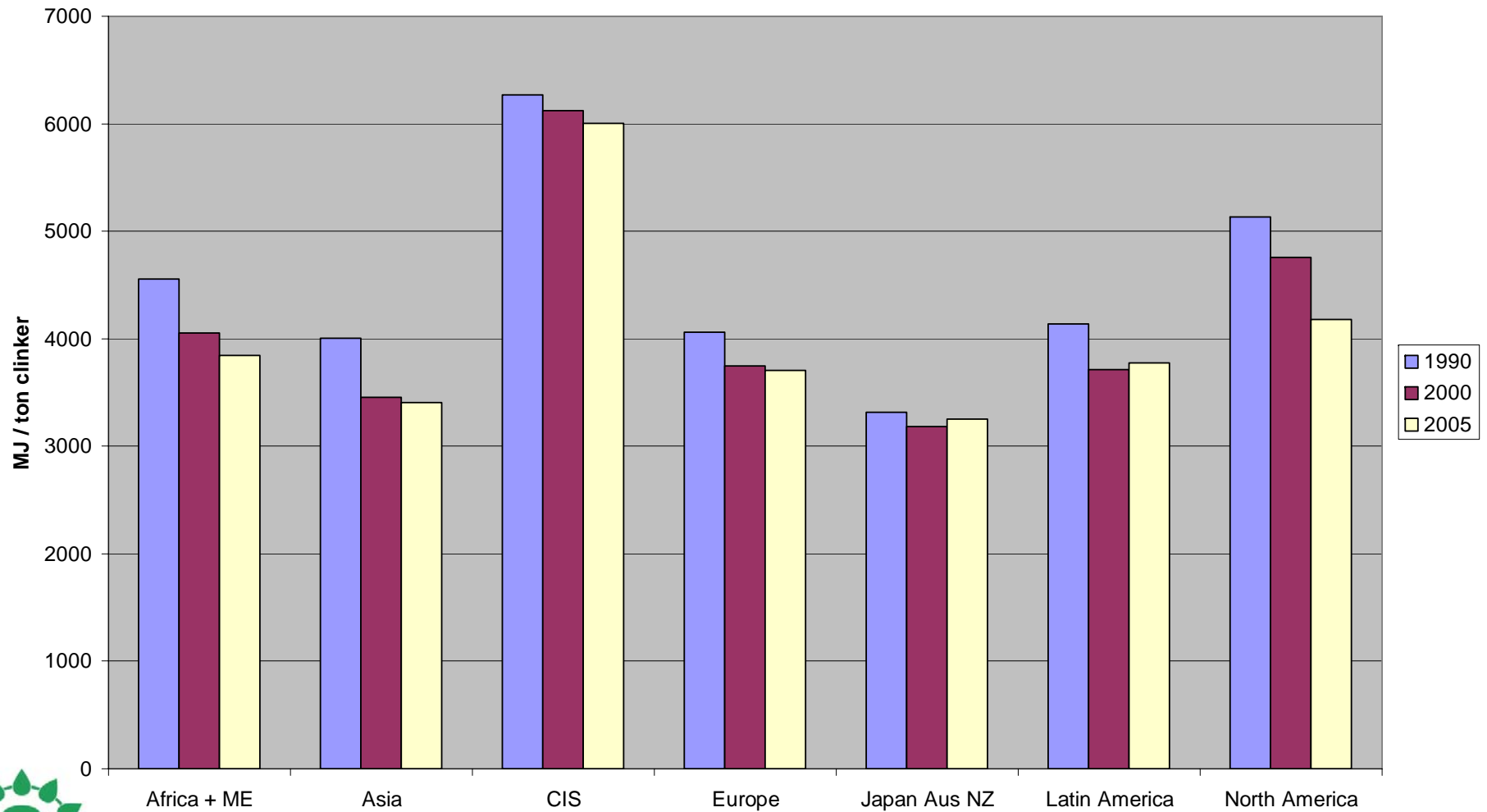
## After the WBCSD / WRI CO<sub>2</sub> protocol, we have built a global database:

- Key goals: **accurate, timely CO<sub>2</sub> emissions and energy data for wide scale use in policy, benchmarking, scenario simulation & analysis, etc.**
- Primary concerns: anti-trust, confidentiality
  - Independent 3<sup>rd</sup> party manages the data base: PwC
  - Companies sign individual contracts with PWC
- Minimize bureaucracy and time delays for CSI members
  - Fixed confidentiality agreement and code of conduct for all participants
- Maximize participation by other entities (CEMBUREAU, etc)

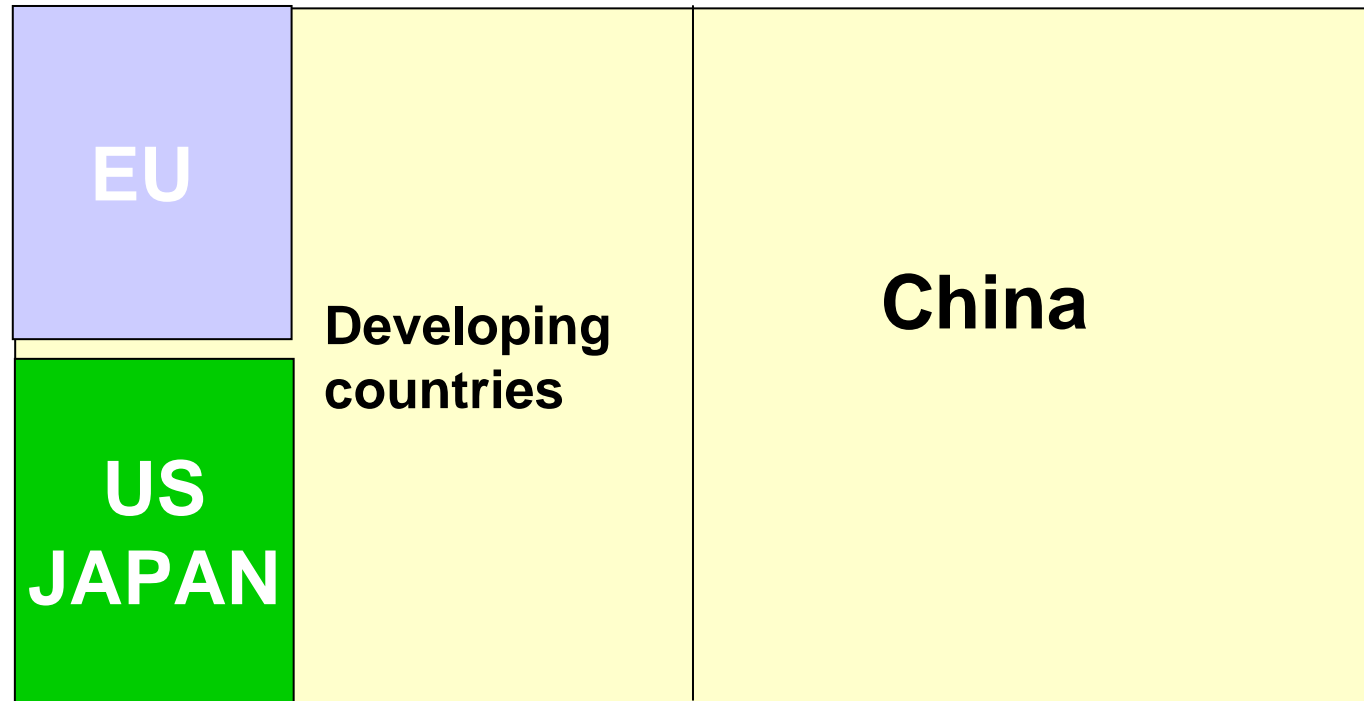


# Energy Use

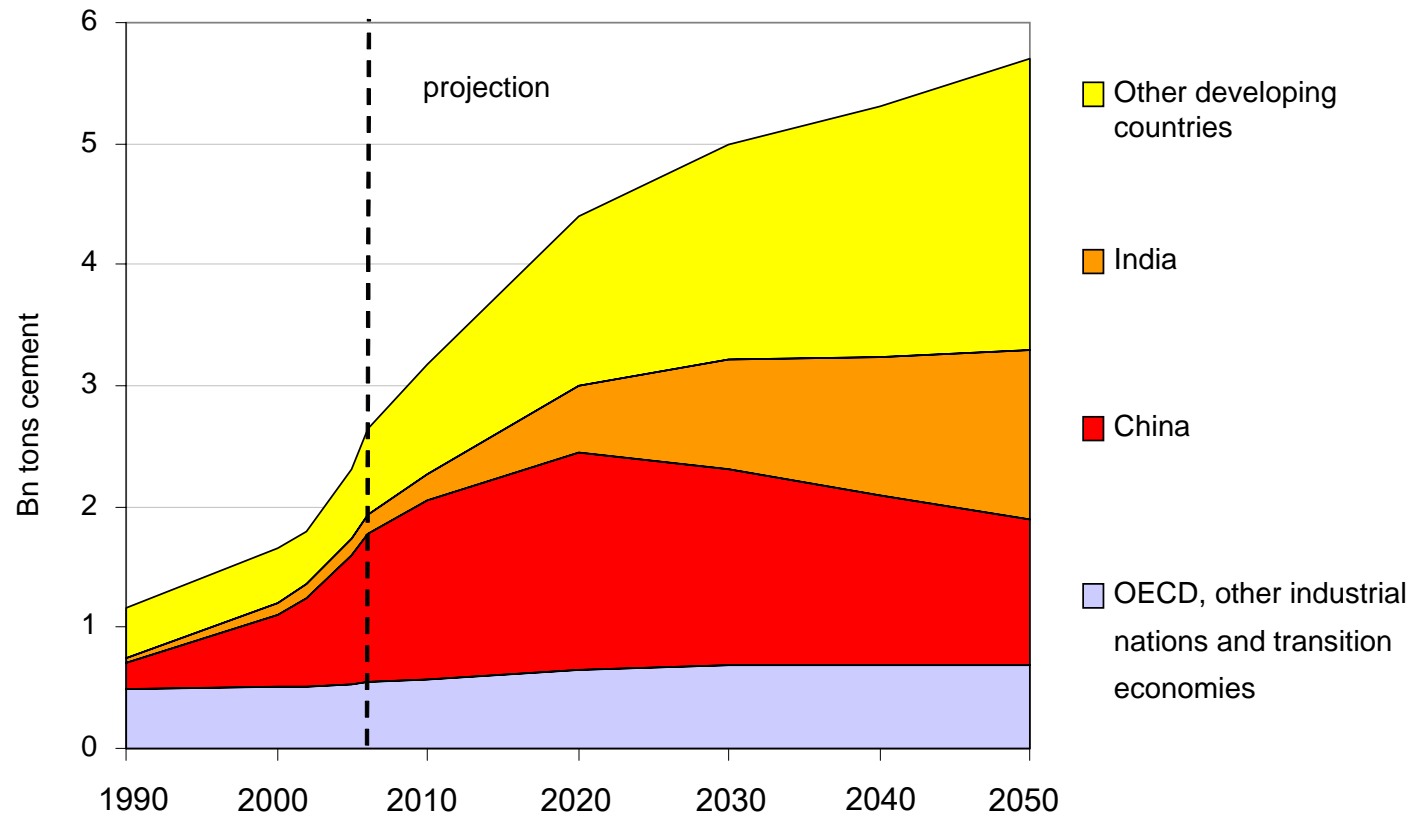
## Heat consumption over time and by region



# The cement playing field industry today ...



# Cement demand, linked to economic development, is growing



The European Cement Association. (May 2006). *Activity report 2006*, retrieved from the Cembureau website

<http://www.cembureau.be/Documents/Publications/Activity%20Report%202006.pdf>

US Geological Survey. (January 2007). *Mineral Commodity Summaries*, retrieved from the USGS website

<http://minerals.usgs.gov/minerals/pubs/commodity/cement/cemenmcs07.pdf>

US Geological Survey. (April 11, 2006). *Historical Statistics for Mineral and Material Commodities in the United States*, retrieved from the USGS website

<http://minerals.usgs.gov/ds/2005/140/cement.pdf>

Michael Taylor, International Energy Agency. (4-5 September 2006). *Energy Efficiency and CO2 Reduction Opportunities in the Global Cement Industry*, retrieved from the IEA website <http://www.iea.org/Textbase/work/2006/cement/taylor.pdf>

