CEMENT INDUSTRY

Concrete is second only to water as the most consumed substance on earth, with nearly one ton of the material used annually for each person on the planet. Cement is the critical ingredient in concrete, locking together the sand and gravel constituents in an inert matrix; it is the 'glue' which holds together much of modern society's infrastructure. This summary highlights a cement-sector initiative undertaken by ten major cement companies from around the world under the auspices of the World Business Council for Sustainable Development (WBCSD). The WBCSD is a coalition of 160 international companies united by a shared commitment to sustainable development via the three pillars of economic growth, ecological balance, and social progress. WBCSD members are drawn from more than 30 countries and 20 major industrial sectors. Details about the organization, its mission, and products are available at their website.[1]

Sustainable Development and the Cement Industry

Sustainable Development (SD) is most frequently defined as "development that meets the needs of the present without compromising the ability of future generations to meet their own needs." [2] Sustainable development focuses on social, environmental, and financial factors and on appropriate governance mechanisms to help manage the delicate balance between sometimes competing objectives. Sustainable development involves local as well as global issues. It is not the same in all countries, or in all businesses. Depending upon local circumstances the emphasis on economic growth, social progress and environmental management can vary considerably.

Why is this an issue to the cement industry?

There has been a dramatic increase in the expectations of what business should deliver to society. Beyond jobs and profits, companies are increasingly held accountable for social and environmental achievements. Until recently, many companies have said proper stewardship of the environment will be one of the major factors affecting their success in the future. The future has clearly arrived, and today few doubt that sustainable development is the major challenge for society as a whole. Like many industries, the cement industry is working to learn how it fits into this new picture: what new roles must it play to insure its continued viability? What issues are important to stakeholders?

Cement is a global commodity, manufactured at thousands of local plants. Because of its weight, cement supply via land transportation is expensive, and generally limited to an area within 300 km of any one plant site. The industry is consolidating globally, but large, international firms account for only 30% of the worldwide market. In many developed countries, market growth is slow or nil, with cement used in bulk primarily for infrastructure construction. In developing markets, growth rates are more rapid. China is the fastest growing market today. In these markets, a large fraction of sales are as bagged product to individual customers. Because it is both global and local, the cement industry faces a unique set of issues, which attract attention from communities near the plant and at an international level. They are complex issues ranging from local dust, noise and employment concerns to the potential impact of cement manufacturing on climate change. The industry has a low public profile, although some issues have generated a great deal of

[1] http://www.wbcsd.org
[2] 'Our Common Future,' The Bruntland Report of the United Nations, 1987.

emotional debate, such as those related to managing wastes, alternative fuels and raw materials used in manufacture.

Three members of the cement industry, Cimpor, Holcim and Lafarge, approached the World Business Council for Sustainable Development (WBCSD) in 1999, asking them to organize a structured evaluation of the sustainable development issues facing the cement industry over the next 20 years. These companies recognized that many of their current practices (energy efficiency programs, use of waste materials, quarry and risk management) were both essential elements of their business, as well as key parts of sustainability concerns. In short, these companies realized both the business opportunities and the need to properly address sustainable development issues as part of their business strategy and their 'license to operate'. By engaging with a wide community of interested parties before a crisis might develop, they hoped to encourage discussion of the issues in ways that were balanced, interactive, and constructive.

Cement Project Goals

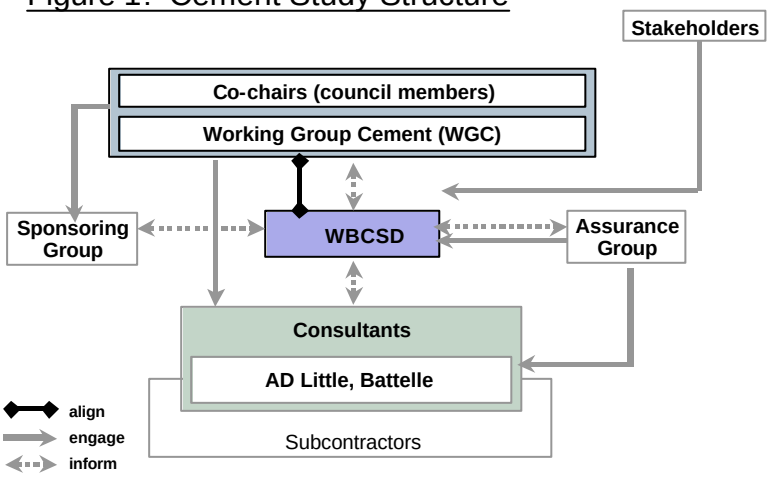
The cement project was set up with four primary goals:

- To deliver an independent, credible evaluation of the cement industry's current performance across the sustainability dimensions: environment, economic and social.
- To provide recommendations and guidance on what could be done to improve performance over the next 20 years.
- To identify specific actions, goals, timeframes, and an engagement plan for implementation by industry, as well as identifying actions which required cooperative efforts with other members of civil society.
- To provide analysis and implementation tools to assist the entire industry (both participants and observers of this project) in moving forward.

Project Structure

This study is one of a number of sector-initiatives at the WBCSD. These include work dealing with Forestry, Mobility, Mining and Minerals, Electric Utilities, and the Financial Sector. Each project is at a different stage of progress, but shares a number of common organizational elements: (1) a Working Group, made up of member company representatives; (2) external sponsors, who have contributed both financial and intellectual support; (3) an independent assurance group, which serves as a 'referee' to make sure the project research was complete, fair, and balanced; (4) independent consulting and research organizations, and (5) active stakeholder engagement throughout the work. The WBCSD Secretariat serves in a coordinating role for these five elements,

Figure 1: Cement Study Structure



as well as managing a project web site[3], and a variety of external communications activities

Project Participants
The three initiating companies, serving as co-chairs for the project, worked quickly to recruit seven others interested in exploring a similar set of issues. The ten companies participating (below) represent over 30% of the current world market capacity.

Company Participants in Sustainable Cement Project
(The Working Group Cement)

- Cemex (Mexico)
- Cimpor (Portugal)
- Italcementi (Italy)
- Lafarge (France)
- Heidelberg Cement (Germany)
- Holcim (Switzerland)
- RMC Group (UK)
- Siam Cement (Thailand)
- Taiheiyo Cement (Japan)
- Votorantim (Brazil)

Assurance Group
An unusual feature of WBCSD member-led projects is the independent nature of the research. In this case, Battelle Memorial Institute (a US-based not-for-profit research organization) was retained by the WBCSD to develop an independent view of the cement industry, including recommendations for future action. While industry participants provided a great deal of input to the study, the recommendations were left in the hands of the consultant. An Assurance Group has reviewed the study plan and work progress during the study to make certain that the work fairly represents the multiple viewpoints, which need to be included in sustainable development. Members of the Assurance Group included:

- Mostafa Tolba, former director of UNEP
- William Reilly, former Administrator of the US Environmental Protection Agency
- Corinne Lepage, former Environment Minister of France
- Victor Urquidi, past president and Professor Emeritus of Collegio Mexico
- Istvan Lang, Past President of the Hungarian Academy of Sciences

All notes from the Assurance Group meetings are publicly available on the project web site, in keeping with the WBCSD's goal of having a transparent research process.

Stakeholders
A key part of the project research was identifying stakeholder concerns. During the scoping phase of the project, telephone and one-on-one interviews were conducted with a number of individual stakeholders to identify key issues. The selection of research topics was further confirmed through a series of local stakeholder dialogues in Brazil, Thailand, Portugal and Egypt. During these discussions, stakeholder groups of 10-40 people reviewed the study plan, objectives, and approach. Their comments were incorporated in fine-tuning the work. In later phases of the project, meetings were held with key public policy and NGO organizations in Brussels and Washington, DC to test the preliminary findings and conclusions against their understandings. Further changes were made to communicate the

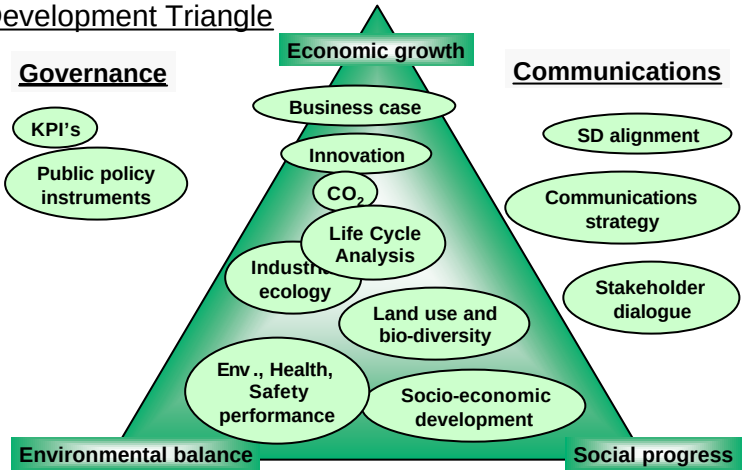
[3] http://www.wbcsdcement.org

work more effectively. A workshop was also held in Beijing to explore how the sustainability concepts developed during the project might be applied in this large developing economy.

Study Content and Execution

An initial review paper was completed with the consulting firm of Arthur D. Little in early 2000 to identify and define key issues facing the cement industry. Results from this work were further refined by the Working Group Cement (company participants) and Battelle leading to a set of 13 focused sub studies as primary basis for the research program. Facilitated stakeholder meetings noted above added to and clarified research goals.

Figure 2: Sub-studies and the Sustainable Development Triangle



Most of the sub studies fall within a typical sustainable development triangle covering environmental, social, and economic matters. Governance concerns were also addressed by looking at a variety of public policy instruments and key performance indicators. An additional set of issues dealing with stakeholder communications was highlighted as critical, both in the initial review, and during subsequent meetings with stakeholders.

Status

The research phase of the project is nearing completion. More than 1500 pages of material have been assembled to help understand where the cement industry fits into a more sustainable world. Early drafts of the reports are now undergoing review and revision. More than seventy external experts have been invited to comment on specific elements of the work, to help insure accuracy, thoroughness, and fair representation of diverse viewpoints. Results from the consultants' reports will be available by April 2002, and widely distributed electronically (via the project website) and in printed summaries. Initial conclusions point to eight issues that are critical for the cement industry to address in any Sustainable Development plan and action program:

1. Resource Productivity – enhanced through improved practices in quarrying, energy use, and waste recovery/reuse
2. Climate Protection – via understanding, measuring and managing CO2 emissions
3. Emissions Reductions – including dust from quarrying, NO_x, SO_x, and other airborne pollutants
4. Ecological Stewardship – both in resource conservation, and in quarry management and restoration programs
5. Employee well-being – improved through greater attention to occupational health and safety concerns
6. Community well-being – improved by enhanced dialogue and engagement
7. Regional Development, and

8. Stakeholder Value creation – by fully incorporating sustainable development into business strategy

Next Steps

This work represents the beginning of a twenty-year change process. Reports are a good starting point, but they do not necessarily guarantee change. Battelle's reports are the first step in this extended process. As a second step, the ten organizing companies have agreed to put forward a specific series of commitments, actions, programs and measurements to help define their sustainability agenda. Part of these commitments will include continued open, transparent engagement with their stakeholders. Already the project has produced two important results:

- A guide for cement plant managers on managing and improving local stakeholder communications, and
- A standard protocol for measuring and reporting CO_2 emissions

The protocol has been verified by independent third party auditors, and is now recognized by the Intergovernmental Panel on Climate Change (IPCC) and the World Resources Institute (WRI), among others. Additional analytical tools have also been developed during the study and will be available as part of the project output.

At this time, it is too early to identify details of this Action Plan, except to say that it will contain measurable targets, public reporting, and mechanisms for ongoing engagement. The Action Plan will be complete in the 3rd quarter, 2002 and will also be widely distributed both in electronic and printed format.

WBCSD
Geneva, Switzerland
February, 2002

Annex I: Sustainable Cement Sponsors, Contributors and Partners

Sponsors

ABB, Switzerland
Cementos Chihuahua, Mexico
Citigroup Corporate & Investment Bank
Compagnie de Fives (FCB Ciment), France
Crédit Commercial de France, France
Credit Suisse, Switzerland
CRH plc, Ireland
Deutsche Bank, Germany
EnBW, Germany
F.L.Smidth A/S, Denmark
KHD Humboldt Wedag AG, Germany
Komatsu Ltd., Japan
Krupp-Polysius, Germany
Loesche GmbH, Germany
I.P.E. – Investimentos e Participaçãoes Empresariais, S.A.
Luso-American Foundation (FLAD), Portugal
Ministério da Ciência e da Tecnologia (MCT), Portugal
Nesher - Israel Cement Enterprises Ltd., Israel
PRo Publications International Ltd, United Kingdom
RWE Plus, Germany
SECIL, Companhia Geral de Cal e Cimento S.A. Portugal
Sotécnica, Sociedade Electrotécnica, LDA Portugal
Ssangyong, Korea
Teixeira Duarte Engenharia e Construções, S.A. Portugal
Teris/SITA, France
Titan Cement, Greece
United Nations University, Japan
WWF International, Switzerland

Communications Partners

ABCP - Brazilain Cement Association, Brazil
American Portland Cement Alliance, USA
Cement Industry Federation, Australia
British Cement Association, United Kingdom
CEMBUREAU, European Cement Association
Japan Cement Association (JCA), Japan
Portland Cement Association, USA
SACPA, South African Cement Producers Association, South Africa
VDZ, VEREIN DEUTSCHER ZEMENTWERKE E.V., Germany