Energy Efficiency in Buildings

a WBCSD initiative

ECTP, Amsterdam, November 20, 2007
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World population growth

200’000 net additional people per day

International Energy Agency: Energy demand and technology perspective

- 2050 base case – CO2 emissions increase by 137% to 60GT/year.
- CO$_2$ emissions can be returned towards today’s level by 2050
  - *Enormous technological effort, enormous change in behaviour*
  - *Improved energy efficiency is the most important contributor to reduced emissions*
  - *Is stabilizing at today’s levels enough?*

http://www.iea.org
International Energy Agency:
Global CO₂ emissions 2003-2050
Baseline, ACT and TECH plus Scenarios

ACT Scenarios 2050

Mt CO₂

2003  Baseline 2030  Baseline 2050  Map  No CCS  Low Efficiency  TECH Plus 2050

+137%  +6%  +21%  +27%  -16%

Other  Buildings  Transport  Industry  Transformation  Power Generation
Energy consumption in buildings over their life cycle

- Renovation and demolition: 4%
- Energy consumption in a building in operation (over 50 years): 85%
- Construction: 1%
- Production of materials: 10%

Participating companies sharing a vision

A world where buildings consume zero net energy
Mission and objectives

To contribute to the challenge of reducing building’s energy use

- Understand the sector
- Raise awareness
- Show business opportunities
- Issue recommendations & commitments
A mix of research and awareness rising

« Facts & Trends »  http://wbcsd.org/web/eeb
  ▪ Basic data on building energy consumption
  ▪ Perception study

« Roadmap for change »
  ▪ Scenario planning, best practice & recommendations

« Call for action & commitments»

Forums around the world
  ▪ 2007: Beijing (03), Brussels (07), New Delhi (10)
  ▪ 2008: Sao Paolo (02), Berlin (06), Washington (11)
  ▪ 2009: Mexico, Tokyo, Paris
Now is the time to act

Figure 1: Best and worst case projections of site energy demand
The objective is to measure…

- The perception of sustainable buildings
- The level of understanding and level of maturity of this concept
- The readiness to adopt sustainable buildings and the constraints faced by investors, architects and contractors

in Spain, France, Germany, US, Japan, China, India and Brazil

Source: WBCSD EEB Perception Study
Professionals overestimate cost premium and underestimate environmental impact

Figure 11: Estimates of buildings’ contribution to total emissions

(Question: “What percentage of CO₂ emissions do you think buildings give rise to – directly and indirectly?”)

Figure 12: Estimates of cost premium for “a certified sustainable building”

(Question: “How much more do you think a certified sustainable building would cost to build relative to a normal building?”)

Source: WBCSD EEB Perception Study
EEB audience think about sustainable buildings around 8 dimensions

- Business community acceptance
- Supportive corporate environment
- Personal know-how
- Economic demand
- Building attractiveness
- Positive climate impact
- Pragmatic involvement
- Personal commitment

Source: WBCSD EEB Perception Study
The top three priority barriers to increased consideration and adoption

Importance of each factor in influencing consideration

- Personal know-how
- Business community acceptance
- Supportive corporate environment
- Personal commitment
- Economic demand
- Positive climate impact
- Pragmatic Involvement
- Building attractiveness

Impact of a 1-point improvement in factor score on consideration score

Source: WBCSD EEB Perception Study
Segmentation of attitudes: Personal know-how drives individual behavior

**Sceptical participant**
Company is highly motivated by CSR...
...but individual is not convinced
Needs clear argument for why

**Campaigner**
Willing to drive/lead adoption
Believes in the economics, the climate impact and the regulatory incentives.
More specifiers/developers

**Unengaged**
Very low knowledge levels and pessimistic about do-ability
Unengaged on environmental issues
More corporate tenants

**Uninformed enthusiast**
Pessimistic about the economics, the climate impact and the incentives
Doesn’t know how to get involved
Passionate about the environment

Source: WBCSD EEB Perception Study
Conditions are in place to significantly increase consideration

- 73% of respondents have heard of green/sustainable buildings
- Only 31% have considered sustainable buildings to date, but 72% state that they would be likely to in the future

Source: WBCSD EEB Perception Study
Conclusions of the perception study

The identified 4 types of behavior among stakeholders
- Unengaged
- Skeptical participants
- Uninformed enthusiasts
- Campaigners

The top three barriers can be addressed:

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<tr>
<th>Personal know-how</th>
<th>Education &amp; facilitation</th>
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<td>Simplifying &amp; standardizing ratings</td>
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<th>Business community acceptance</th>
<th>PR/ marketing ahead of the curve</th>
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<td>Show “it works” using best practices</td>
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<tr>
<th>Supportive corporate environment</th>
<th>Promote real innovation success stories</th>
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<td>Link success to marketing &amp; CSR</td>
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Source: WBCSD EEB Perception Study
The Facts and Trends report also identifies key change levers

- Finance
- Holistic approach
- Behaviors
- Regulation
Next steps

- Forums
- Create scenarios to establish a roadmap and recommendations
- Raise awareness by presenting EEB
Thank you
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