



# **Bob Willard's Master Slide Set**

Version 8

March 29, 2009



Net Impact is grateful to Bob Willard, sustainability consultant, leadership expert, and author of *The Sustainability Advantage*, for his kind donation of this slide deck to our active members.

For more information about Bob's work, please visit:  
<http://www.sustainabilityadvantage.com/>

# Impact at Work

**In addition to providing resources like this slide deck, Net Impact supports social intrapreneurs and sustainability champions through the Impact at Work Program.**



- **Impact at Work participants** are social intrapreneurs who use their business skills to create positive social and environmental change from the ground-up in their workplaces
- Net Impact's social intrapreneurs have **added value to companies** by:
  - Improving existing processes to reduce costs and waste
  - Increasing employee engagement, attraction, and retention
  - Building the capacity of employees to lead and manage projects
  - Building new opportunities for a firm to generate revenue and access new markets
- **Net Impact Central** supports these projects with:
  - Conference calls, brainstorming sessions and individual advising
  - Best practices
  - Leadership training
  - In-depth resources
- **To get involved**, email Program Manager Josh Cleveland
- **Learn more** at [www.netimpact.org/impactatwork](http://www.netimpact.org/impactatwork) or contact [jcleveland@netimpact.org](mailto:jcleveland@netimpact.org)

# Bob Willard's Master Slide Set

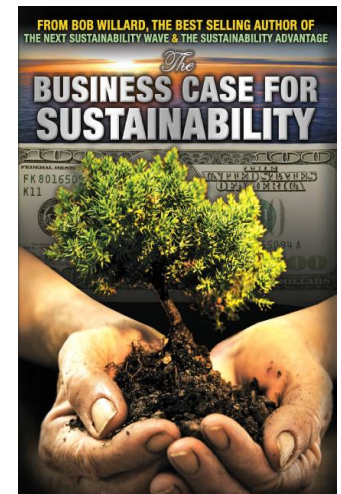
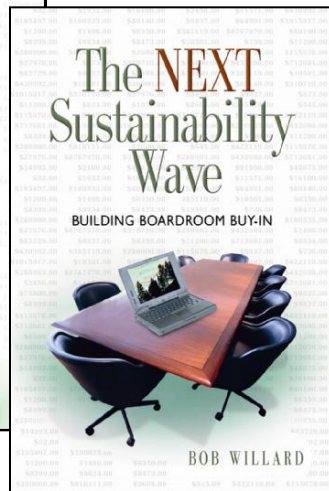
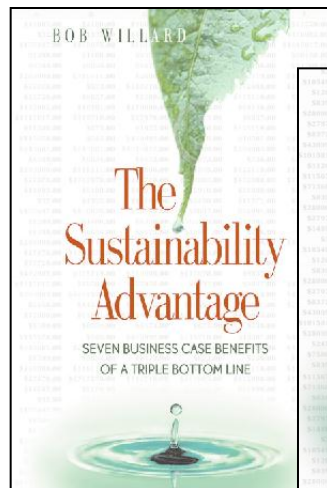
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# Communicating the Business Case for Sustainability

## INTRODUCTION / TERMINOLOGY / 3-LEGGED STOOL

Slide Subset 1

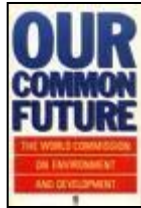
# Communicating the **BUSINESS CASE** for Sustainability



# Definitions of Sustainability

## Sustainable Development (SD)

Meeting the needs of the present generation  
without compromising the ability of future generations  
to meet their own needs



-- Brundtland Commission, 1987 --

## Sustainability

The possibility that human and other forms of life on earth  
will flourish forever

-- John Ehrenfeld, Professor Emeritus. MIT --

## Sustainable Development (SD)

Enough - for all - forever

-- African Delegate to Johannesburg (Rio+10) --

# Conditions for a Sustainable Society

In a sustainable society, **nature** is **not subject to** systematically increasing...



...concentrations of substances extracted from the Earth's crust,



...concentrations of substances produced by society,



...degradation of nature by physical means,

...and, in that society, **people** are **not subject to** conditions that systematically undermine...



...their capacity to meet their needs.





# Conditions for a Sustainable Society

In a sustainable society,  
**nature is not subject to systematically increasing ...**

1. **concentrations of substances extracted from the earth's crust**  
e.g. heavy metals, mercury, lead, cadmium; fossil fuels
2. **concentrations of substances produced by society**  
e.g. 70,000+ chemicals; dioxins, PCBs, flame retardants
3. **degradation by physical means**  
e.g. forests, fisheries, farm lands  
... and in that society ...
4. **people's needs are met worldwide**  
e.g. air, water, food, shelter, quality of life



# Core Concepts of Sustainability



## Futures Thinking

Intergenerational responsibility



## (Eco-)Systems Thinking

Carrying capacity of the planet  
to absorb waste and support life



## Social Justice

Equity, Dignity, Basic services, Human rights,  
Stakeholder voices

\*\*\*\*\*

Economic, Environmental, Social/Cultural  
responsibilities

# Sustainability 3-Legged Stool

## Sustainability

### Economic Leg

Good Jobs  
Fair wages  
Security  
Infrastructure  
Fair Trade



### Environmental Leg

0 Pollution & Waste  
Renewable Energy  
Conservation  
Restoration

### Social Leg

Working conditions  
Health services  
Education services  
Community & Culture  
Social justice

**Quality of Life / Genuine Wealth / Genuine Progress**

# Corporate Definitions of Sustainability

## Corporate Social Responsibility

The overall relationship of the corporation with its stakeholders. Elements of social responsibility include **financial** performance, creation and maintenance of **employment**, **environmental** stewardship, **employee** relations, and investment in **community** outreach

The Conference Board of Canada  
Insights You Can Count On



-- Conference Board of Canada --

## Corporate Social Responsibility

The commitment of business to contribute to sustainable economic development – working with **employees**, their **families**, the **local community** and **society at large** to improve their **quality of life**



-- World Business Council for SD --

# Corporate Sustainability 3-Legged Stool

**Sustainability = Sustainable Development (SD)**  
**= Environmental, Social, Governance (ESG)**  
**= Corporate Social Responsibility (CSR)**  
**= Corporate Responsibility (CR) = Green**  
**= Triple Bottom Line (TBL) = 3Es = 3Ps**

## **Economy - Profits**

Growth, Jobs,  
Taxes  
Products  
Services



## **Environment - Planet**

Eco-efficiencies  
Eco-effectiveness

## **Equity - People**

Employees  
Community / Culture  
World

# Smart Business 3-Legged Stool

## Asset Management

Financial  
Capital

Built  
Capital



Natural  
Capital

Human  
Capital

Social  
Capital

## Sustainable Value Creation

# Definition of a Sustainable Enterprise

A sustainable enterprise **does not contribute** to increasing ...



...concentrations of substances  
extracted from the Earth's crust,



...concentrations of substances  
produced by society,



...degradation of nature by physical means,

... and **does not contribute** to conditions ...



... that systematically undermine peoples'  
capacity to meet their needs.



# Regional 3-Legged Stool

## Responsible Growth

### Vibrant Economy

Jobs, Tax base,  
Attracting good  
businesses

Infrastructure  
for Growth



### Enhanced Environment

Air, Land, Water,  
Energy, Green space

### Safe Community

Social Services  
Health Care,  
Education, Housing

Cultural Diversity



# Municipal “3-Legged Stool”

## Responsible Growth

### Economic Security

Responsible  
businesses,  
Jobs, Tax base

### Infrastructure and Built Environment

Public transit,  
Energy-efficient  
buildings



### Ecological Integrity

Air, Land, Water,  
Biodiversity, Local  
renewable energy,  
Zero waste

### Governance and Empowerment

### Social Well-being

Health care, Safety,  
Education, Housing,  
Culture

# University “3-Legged Stool”

## Growth, Research, Learning

Institutional  
Financial  
Health

Income,  
Investments,  
Governance,  
Courses



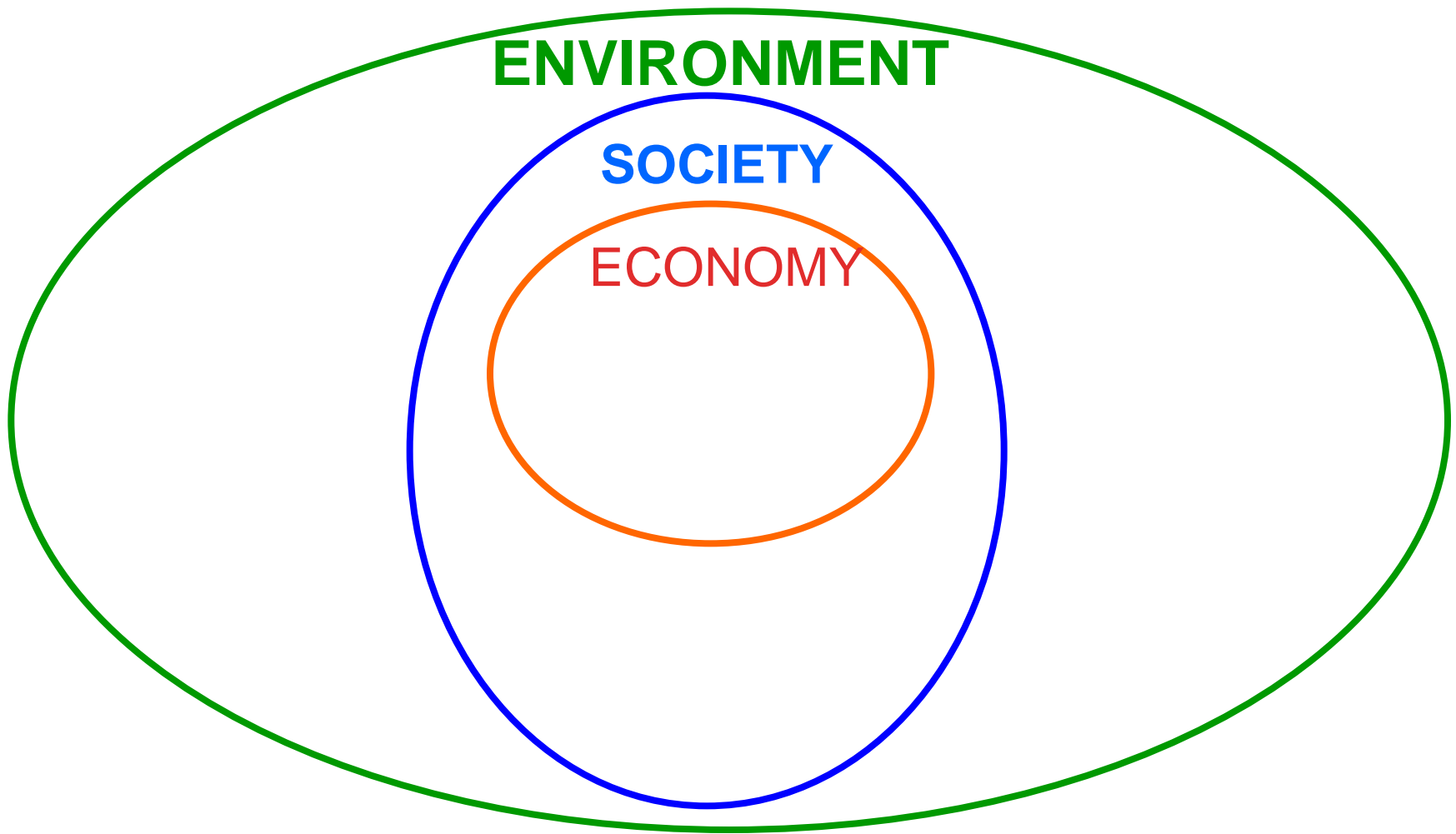
Environment

Energy, Water, Materials,  
Waste, Air, Land use

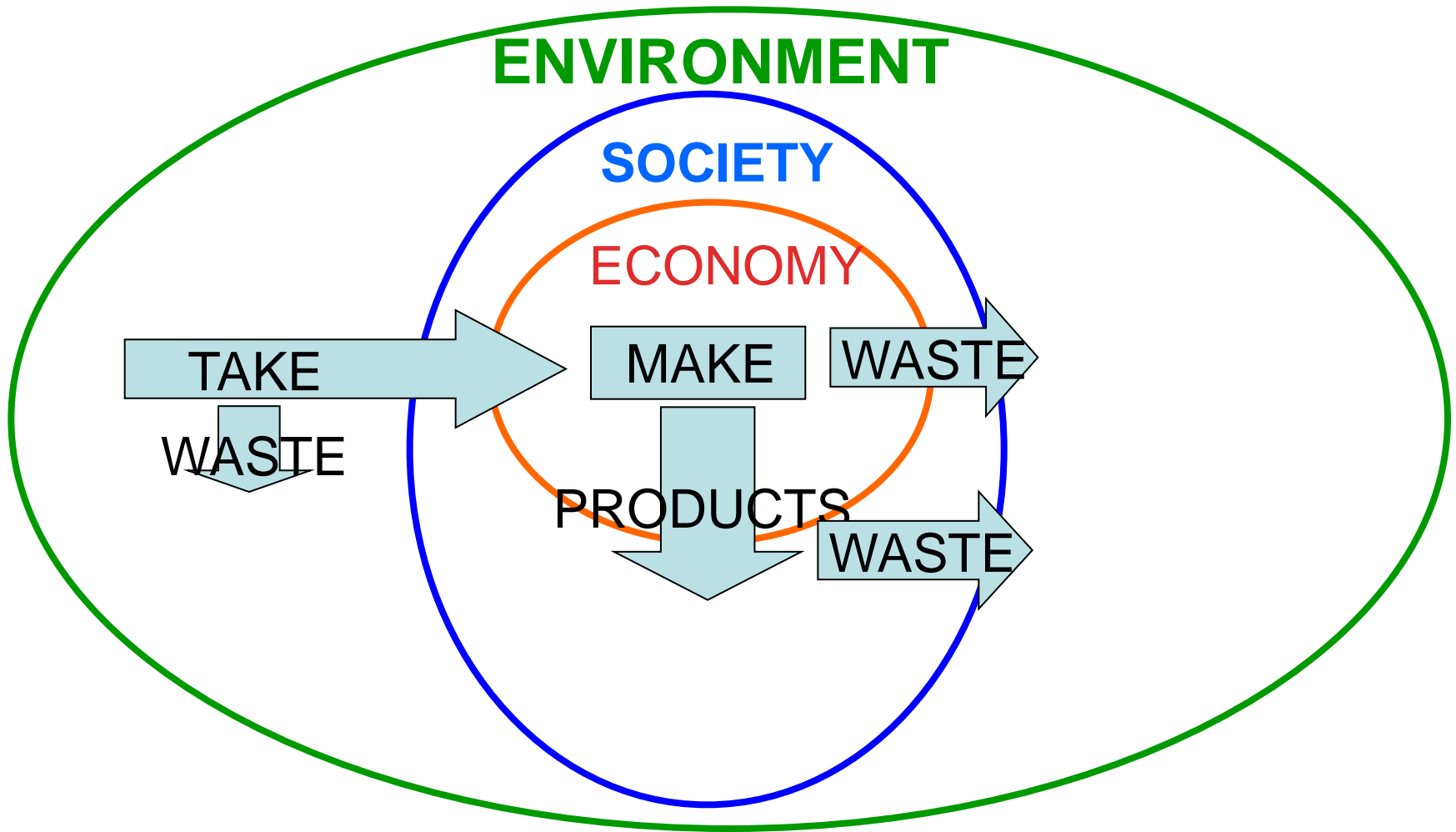
People

Health & Well-being,  
Food, Safety, Recreation,  
Accessibility, Wages  
Knowledge, Community,  
Housing, Transit

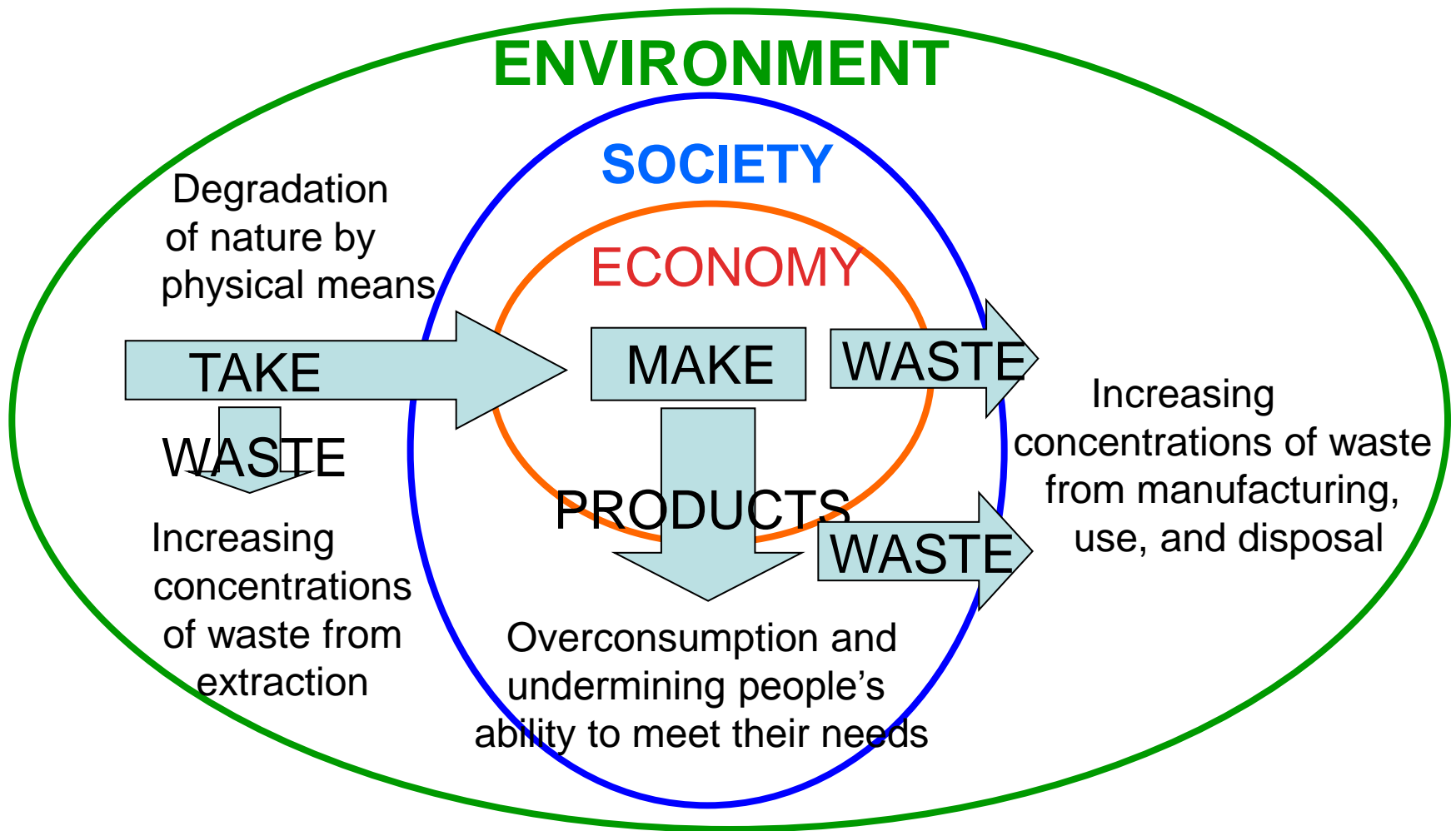
# Nested Dependencies



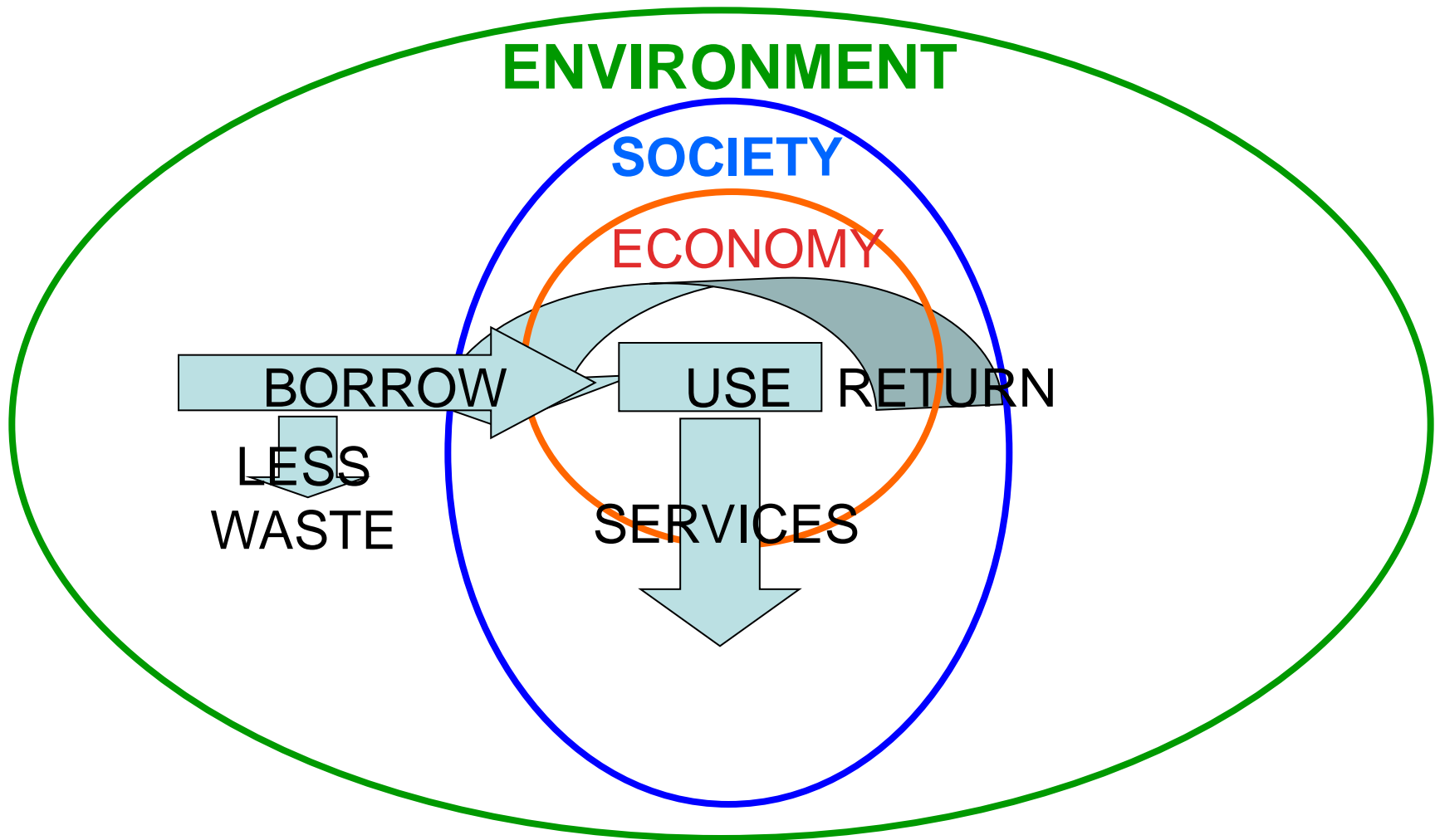
# Linear Take-Make-Waste Model



# Unsustainable Take-Make-Waste Model



# Cyclical Borrow-Use-Return Model



# 1950's Recession Solution

Reporter to President Eisenhower:

What should citizens do to help  
the recession recede?

Eisenhower: Buy.

Reporter: Buy what?

Eisenhower: Buy anything.

## Resulting ad slogans

“Buy your way to economic prosperity”

“Buy, buy, buy. It is a patriotic duty.”

“Buy and be happy.”

# Over-Consumption By Design

“Our enormously productive economy demands that we **make consumption our way of life**, that we convert the buying and use of goods into rituals, that we seek our spiritual satisfactions, our ego satisfactions, in consumption.

**We need things consumed, burned up, worn out, replaced and discarded at an ever increasing rate.”**

(Victor Lebow, “The Nature of Postwar Retail Competition,” Journal of Retailing, Vol. 9, 1944)

What was needed was strategies that would make Americans in large numbers into **voracious, wasteful, compulsive consumers** ... additional strategies were needed that would induce the public to consume at ever-higher levels.

Vance Packard, *The Waste Makers*



# Communicating the Business Case for Sustainability

## 5-STAGE JOURNEY / ICEBERG OF COMPANY VALUE

Slide Subset 2

# 5-Stage Sustainability Journey

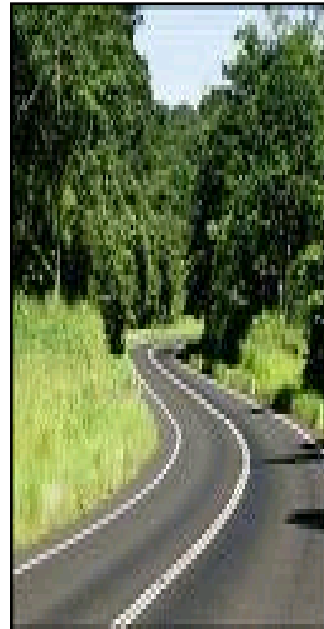
## 5. Purpose/Passion

Values-driven founder / CEO

---

## 4. Integrated Strategy

Enhanced business value



## 3. Beyond Compliance

Eco-efficiencies /  
PR crisis /  
Regulatory threat

## 2. Compliance

Regulatory enforcement

## 1. Pre-Compliance

# Motivations vs. Behaviors

## 5. Purpose/Passion

Means: Be a successful company

End: Contribute to better world

---

## 4. Integrated Strategy

Means: Contribute to a better world

End: Be a successful company



# 5-Stage Sustainability Journey

## 5. Purpose/Passion

Values-driven founder / CEO

## 4. Integrated Strategy

Enhanced business value



## 3. Beyond Compliance

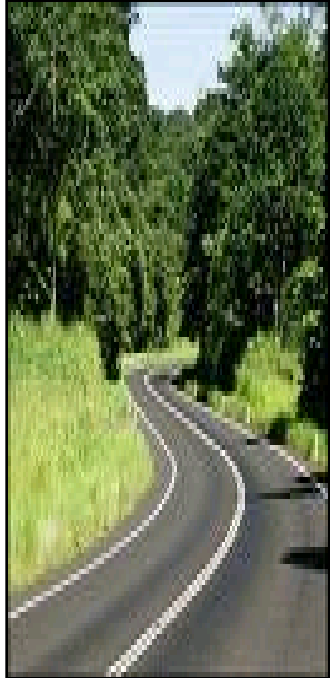
Eco-efficiencies /  
PR crisis /  
Regulatory threat

## 2. Compliance

Regulatory enforcement

## 1. Pre-Compliance

# 5-Stage Sustainability Journey



## 5. Purpose/Passion

Values-driven founder / CEO

---

## 4. Integrated Strategy

Enhanced business value

## 3. Beyond Compliance

Eco-efficiencies

PR crisis

Regulatory threat

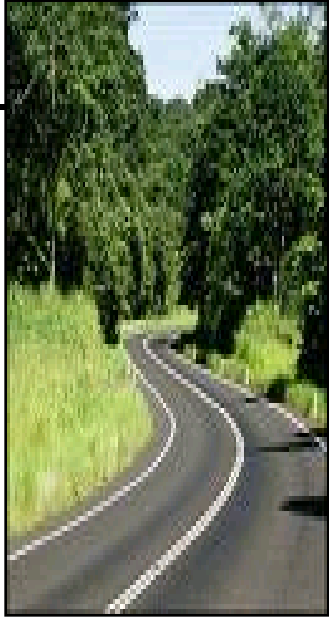
## 2. Compliance

Regulatory enforcement

## 1. Pre-Compliance

# 5-Stage Sustainability Journey

## 5. Purpose/Passion



## 4. Integrated Strategy

Enhanced business value

### 3.3: Sustainable governance

### 3.2: New products, services, markets

### 3.1: Improved supply chain conditions

## 3. Beyond Compliance

## 2. Compliance

## 1. Pre-Compliance

# Eco-Efficiency Opportunity?



Global shipping traffic  
2-5% of global CO<sub>2</sub> emissions  
7% of global SO<sub>2</sub> emissions  
11-12% of global NO<sub>x</sub> emissions

Fuel costs are more than 50% of ship operating costs;  
fuel costs rose 70% in 2007

SkySails-System lowers fuel costs by 10-35% / year;  
by 50% temporarily, under optimal wind conditions

# PR Crisis?

## MARINELOG

*November 7, 2007*

### **Study: Ship emissions cause 60,000 deaths a year**

Demands for cuts in harmful emissions from oceangoing ships are likely to gain new urgency as the result of publication of a scientific study that indicates that the number of premature deaths resulting from such emissions totaled 60,000 in 2002, and that death toll is estimated to grow by 40 percent by 2012 due to continued large increase in global shipping traffic.

Entitled "Mortality from Ship Emissions: A Global Assessment," the peer-reviewed study has been published by the the American Chemical Society journal Environmental Science & Technology. The lead authors are Dr. James J. Corbett of the University of Delaware and Dr. James Winebrake of the Rochester Institute of Technology.



# Regulatory Threat?

[Legislation](#) > 2007-2008 (110<sup>th</sup> Congress)



## **S. 1499: Marine Vessel Emissions Reduction Act of 2007**

A bill to amend the Clean Air Act to reduce air pollution from marine vessels.

Overview

Summary

### **Congressional Research Service Summary**

The following summary is provided by the Congressional Research Service, which is a nonpartisan government entity that serves Congress and is run by the Library of Congress. The summary is taken from the official website [THOMAS](#).

5/24/2007--Introduced.

Marine Vessel Emissions Reduction Act of 2007 - Amends the Clean Air Act to direct the Administrator of the Environmental Protection Agency (EPA) to promulgate regulations that, effective beginning on December 31, 2010, require specified marine vessels to use fuel that contains not more than 1,000 parts per million of sulfur in their main and auxiliary engines. Authorizes the Administrator to promulgate interim regulations upon determining that compliance with such requirement is not technically feasible by such date.

Authorizes the Administrator to provide for an alternative mechanism of compliance for a marine vessel if: (1) the vessel employs a control technology that reduces emissions of sulfur oxides and particulate matter to at least the same degree as the reduction that would be achieved through compliance with the applicable fuel sulfur content limitation; and (2) the emission reductions achieved are in addition to any reductions required to achieve compliance with an applicable engine emission standard.

The Senate Environment and Public Works Committee passed the [Marine Vessel Emissions Reduction Act of 2008](#) to require any ocean-going vessel, U.S. or foreign, using U.S. ports to use fuel with reduced sulfur content (May 2008)

# The Food Crisis

Food riots, 3 X cost of rice & corn  
Overnight crisis or gradual “silent tsunami”?  
Meltdown of global food and agriculture system?

## Contributing causes

- **Crop shortfalls**: Severe weather events
- **Peak soil & water**: irrigation effects, floods
- **Runaway oil prices**: transportation & fertilizer
- **Subsidies**: biofuel ethanol → 70% of corn price rise
- **Meat demand**: 2 X in India & China
- **Export bans**: hoarding rice to protect supply
- **Speculation**: investors control 60% of wheat trade
- **Globalization**: local mono-crops for global consumers
- **IMF loan conditions**: elimination of import barriers



# Sustainable Agriculture Initiatives



## EU's Sustainable Agriculture Initiative (SAI)

Founded in 2002 by Nestlé, Unilever, Danone  
+ Coca-Cola, Kraft, McCain, McDonald's, Sara Lee,  
Kellogg's, Danisco

Chapters in Australia and The Philippines



## U.S. Keystone Group

Founded in 2007

American Soybean Assoc., Bayer Crop Science,  
Bunge Limited, Cargill, Coca-Cola, Feishman-Hillard,  
Grocery Manufacturers of America, Mars, McDonald's,  
Monsanto, Syngenta, DuPont, General Mills,  
National Assoc. of Wheat Growers,  
National Corn Growers Assoc., National Potato Council,  
United Soybean Board, etc.

# Company Value “Iceberg”



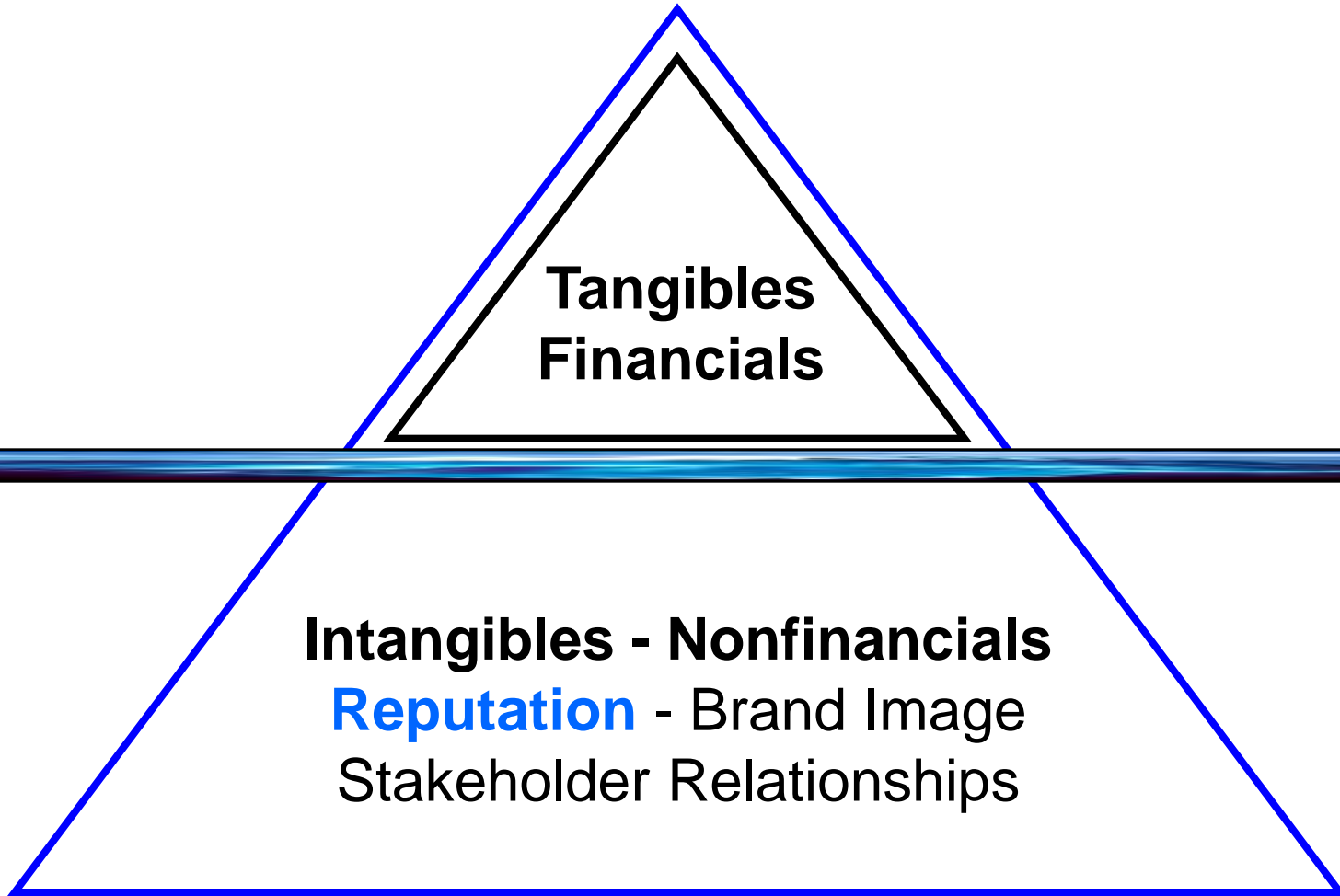
# Company Value “Iceberg”

Balance Sheet

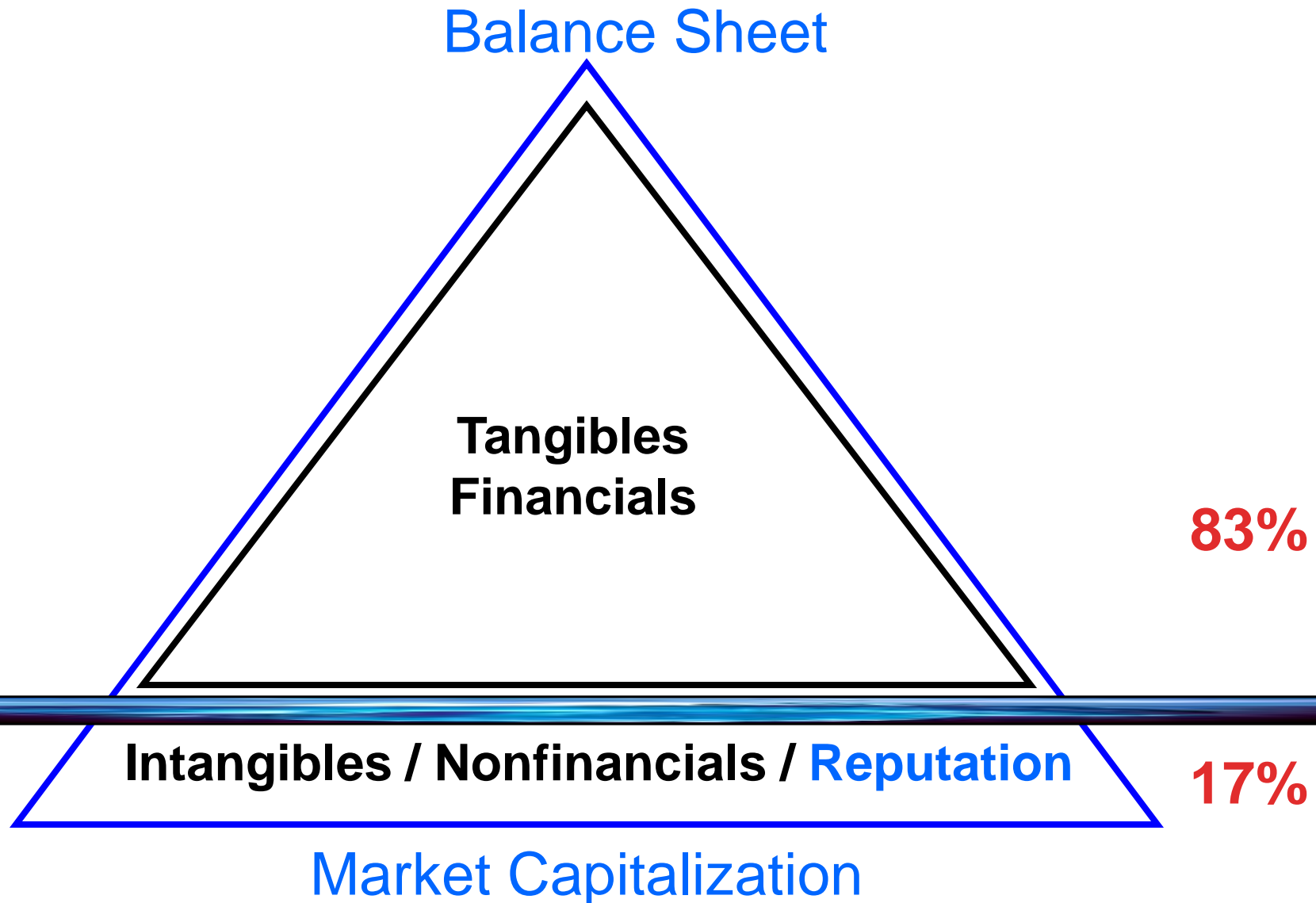
**Tangibles**  
**Financials**

**Intangibles - Nonfinancials**  
**Reputation** - Brand Image  
Stakeholder Relationships

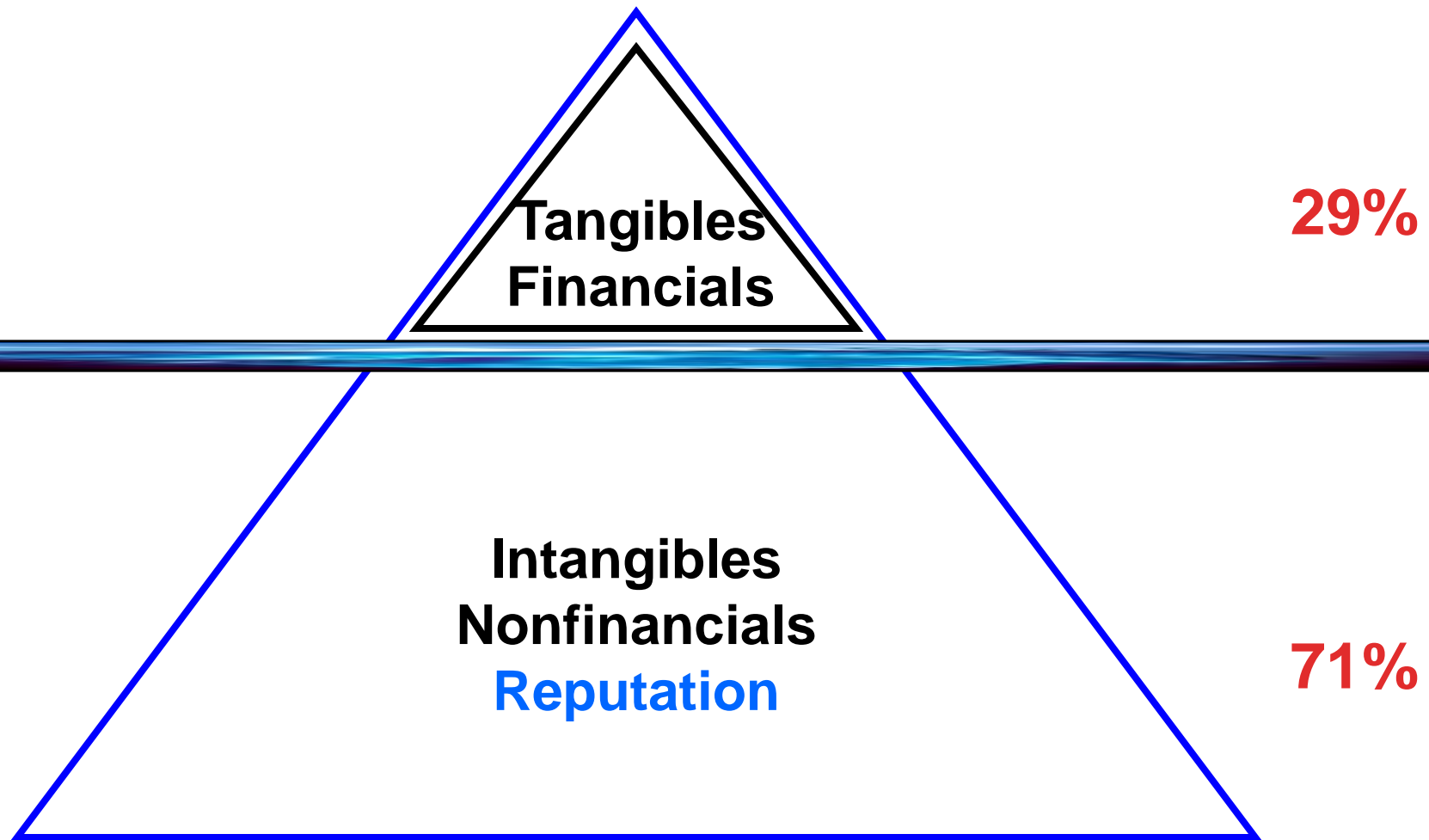
Market Capitalization



# Company Value “Iceberg”: 1981



# Company Value “Iceberg”: 1998



# Leaders in “Extra-Financial” Valuation

Innovest Strategic Value Advisors,  
GovernanceMetrics International, Audit Integrity,  
Corpedia's Ethisphere

Investors' demanding **extra-financial** information when evaluating the **risk-return potential** of companies committed to good governance practices

"More and more mainstream investors understand that ESG [environmental, social, and governance] issues can be **material** to long-term results and therefore must be factored into investment processes."

-- James Gifford, Executive Director, PRI Initiative, July 07 --





# Enhanced Analytics Initiative (EAI)

Doing research on materiality of extra-financial issues (EFI) and intangibles

Founded by 6 European sell-side brokerage firms (Oct. 04)  
26 global members with \$2.4T in assets (July 07)  
Members contribute at least 5% of commissions

Extra-Financials / Intangibles / Non-financials

Management / board focus on long-term company value  
Future regulatory / political / public concern / risks  
Environment / climate change / externalities risks  
Quality of human capital management  
Governance structure risks; Supply chain risks  
Branding; Corporate ethics; Stakeholder relations

ENHANCED ANALYTICS INITIATIVE 

<http://www.enhancedanalytics.com/>

# Principles for Responsible Investment (PRI)

Developed by institutional investors,  
the UN Environment Programme's Finance Initiative (UN-FI),  
and the UN Global Compact

Signed by 400+ institutional investors with \$15T in assets

Adopted by the Private Equity Council (PEC) (Feb 09)

Commit to incorporate ESG issues into investment analysis, to  
be active ESG shareholders,  
and to seek ESG disclosure in annual reports

Merged with the Enhanced Analytics Initiative (EAI) (Oct 08)



Principles  
for Responsible  
Investment

# Accounting For Sustainability Project

## 1. Embeds sustainability into decision-making processes

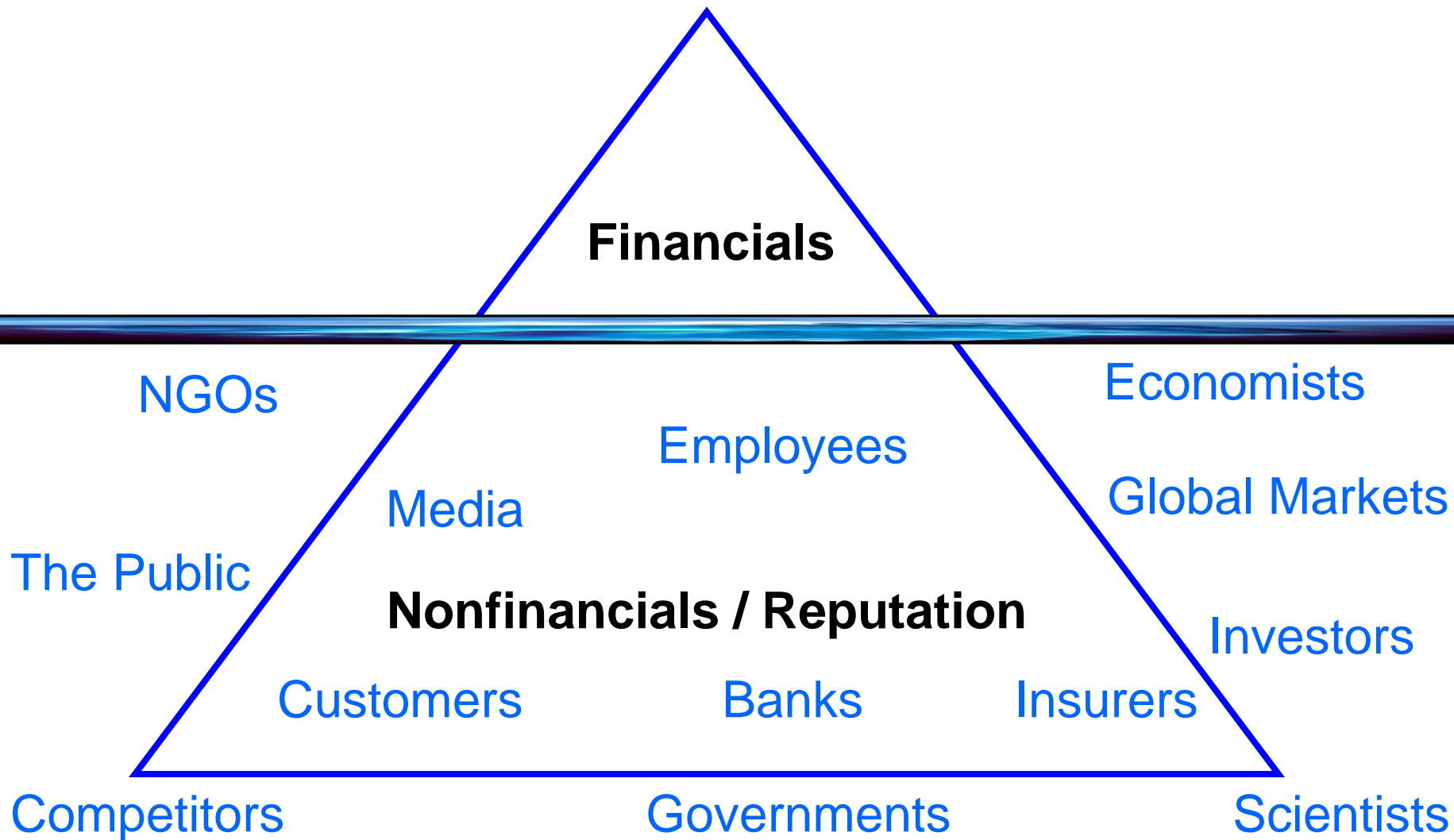
Provides decision-makers with a desk top model to take sustainability impacts into account more fully and consistently in day-to-day decisions and help them assess and quantify 5 key factors: polluting emissions, energy use, water use, waste, and use of other finite resources.

## 2. Simplifies sustainability assessment and reporting

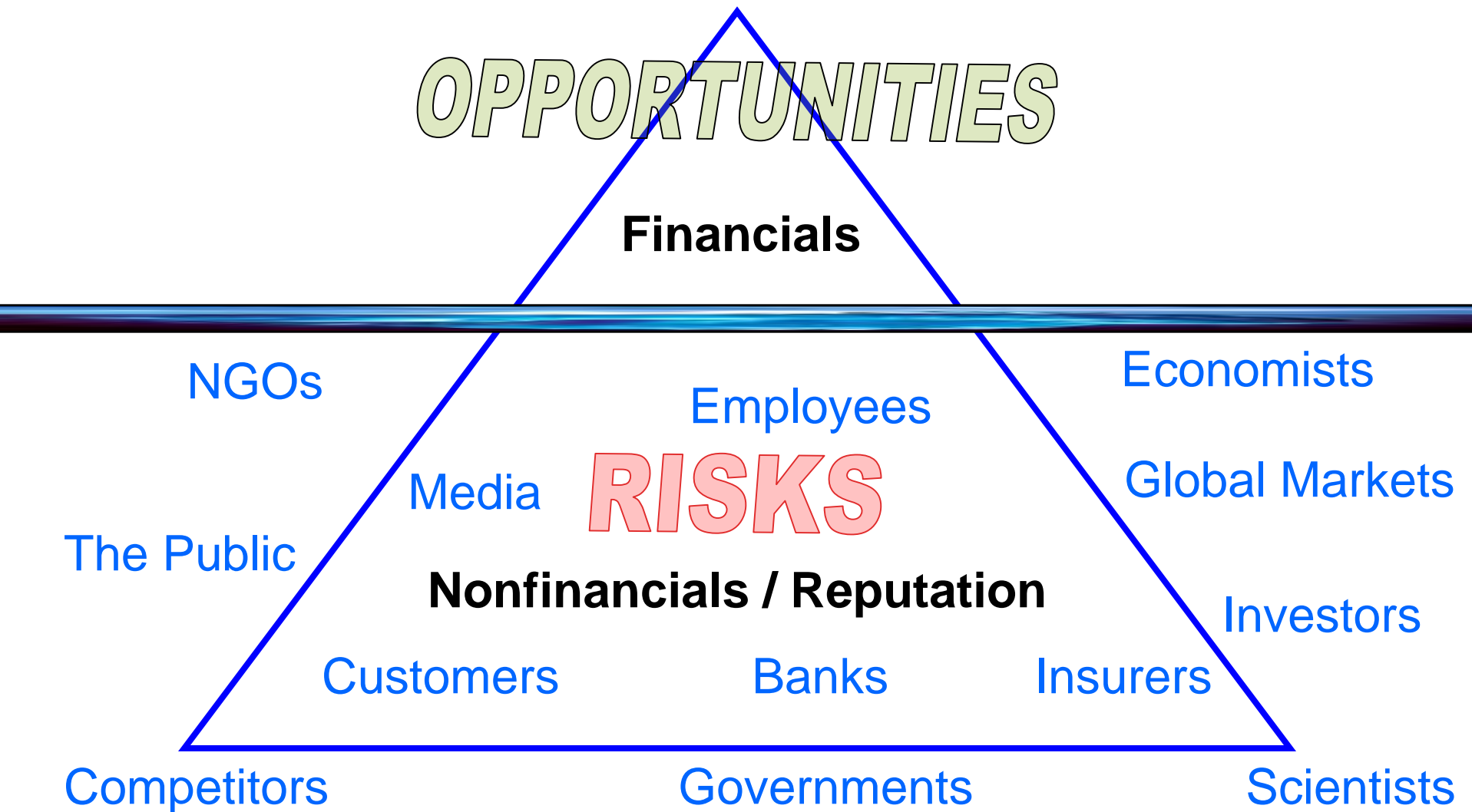
Ensures sustainability is integrated in a clear, concise and consistent way in the main audited accounts, business review, or ancillary reports and statements, perhaps incorporating some elements of full cost accounting



# Sea of Demanding Stakeholders



# Two-Part Business Case



# 4Ds of How to Handle “Unimportant” Stakeholders

## 1. Deny / Deflect

Asbestos is safe. Genetics cause cancer.

## 2. Dismiss / Downplay / Debate / Doubt the issue

OK, asbestos can cause cancer, but not this person's kind of cancer, and not at those doses.

## 3. Discredit / Degrade / Disparage the stakeholder

These people are a special interest group / not experts.

## 4. Delay

OK, we'll study this more / have a royal commission.

# Risk Assessment / Scenario Planning

## 1. Identify future salient issues

Identify key value drivers over life cycles

## 2. Build scenarios around each

2-3 plausible outcomes for each scenario

## 3. Assign probabilities to each scenario

Focus on best- and worst-case scenarios

## 4. Assess company exposure to these issues

Magnitude of impact / timing / probability

## 5. Evaluate financial impacts for selected scenarios

Compare to baseline based on company & industry trends

# Communicating the Business Case for Sustainability

## PERFECT STORM OF RISKS / PRESSURE FROM CONSUMERS & SCIENTISTS

Slide Subset 3



# The Perfect Storm

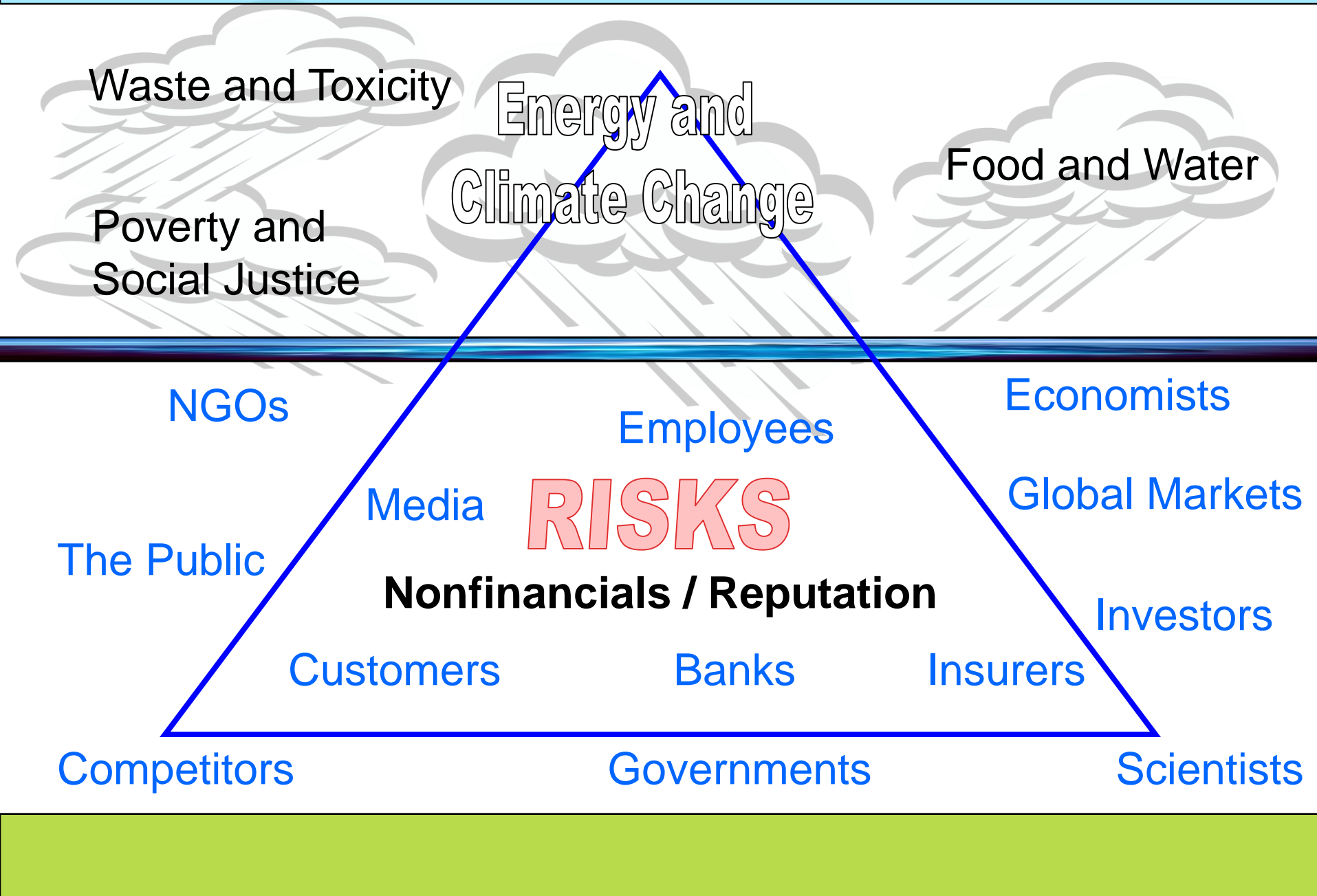
Oct. 27 – Nov. 1, 1991

- 
1. Hurricane Grace (former)
  2. Cold front from Great Lakes
  3. Warm front from Sable Island
- Fed on each other's energies***

*Worst storm in history ... 100' waves*  
*Sudden, unexpected, devastating*

v

# Big Four Sustainability Storm Clouds



# 12 Mega-Issues on Corporate Horizon

1. **Climate crisis:** Carbon caps / taxes; impact on tourism
2. **Energy crisis:** High energy prices; GHG risks; new clean / storage technologies; clean-tech investment wave
3. **Water wars:** Rising sea levels; shortage of potable water; mass migrations; China, India, Australia, EU, NA;
4. **Food Crisis:** Caused by droughts, speculation, biofuels, “peak soil,” population explosion, climate change, Asian demand for meat and milk, “natural” disasters
5. **Pollution and disease:** Pandemics; HIV / AIDS; new disease vectors; nutrition concerns; air, water, soil pollution risks; green chemistry
6. **War on poverty:** Globalization backlash; risk of civil disorder; closing the chasm between rich and poor



# 12 Mega-Issues on Corporate Horizon

7. **Racial tensions:** Immigration waves; racial / religious tensions in developed countries; eco-refugees
8. **Investor activism:** Climate risks by mainstream investors
9. **National security:** Terrorism phobias; walled countries
10. **Re-legitimization of role of government:** EU and LA
11. **Rise of “social enterprise:”** Erosion of trust; demand for risk transparency, disclosure, reporting; stakeholder capitalism vs. shareholder capitalism; revisiting the purpose of the corporation
12. **“Blessed Unrest:”** Rise of millions of environmental, social justice, indigenous peoples NGOs; an organic movement of movements



# Corporate Influence

Q: How do you feel about the influence of large companies on government?

A: Large companies have too much

World 74%

Canada 80%

U.S. 82%

**If you can't fix it, feature it**





# The Debate is Over ...

***Positive proof of global warming.***



# Climate Change Impacts Shipping

## Great Lakes' Lower Water Levels Propel a Cascade of Hardships

By [Kari Lydersen](#)

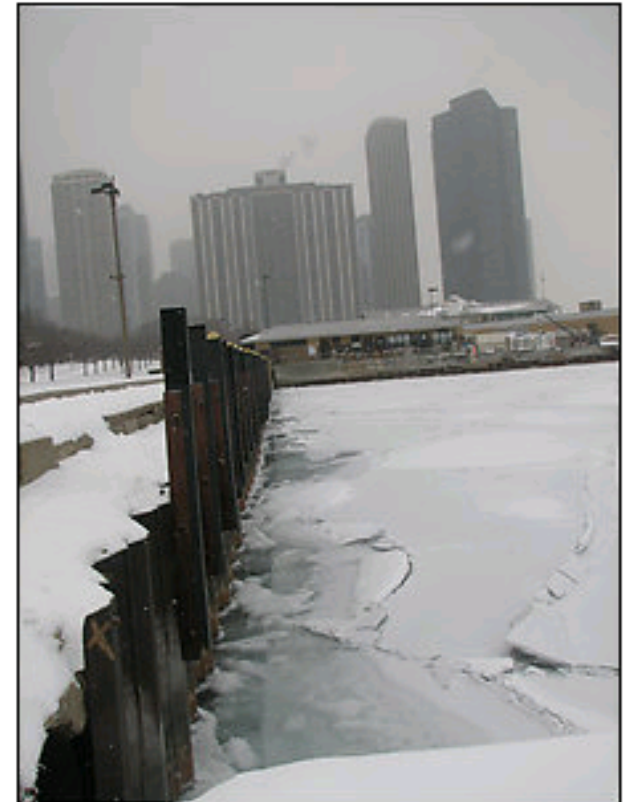
Washington Post Staff Writer

Sunday, January 27, 2008; Page A04

CHICAGO -- A decade ago, [Chicago](#) winters meant monumental ice hillocks and caves forming along the lakeshore, skirted by interlocking ice sheets like a giant jigsaw puzzle.

Today, it is rare to see more than a thin frozen shelf or a few small ice floes sloshing in [Lake Michigan](#) below the city's skyline.

Decreased ice cover on the Great Lakes, probably caused by increasing air and water temperatures and high winds, is a major culprit in lowering water levels, which have hurt the shipping industry, forced lakeside power plants to extend their cooling pipes, frustrated recreational boaters, dried up wetlands and left coastal landowners with docks extending over yards of

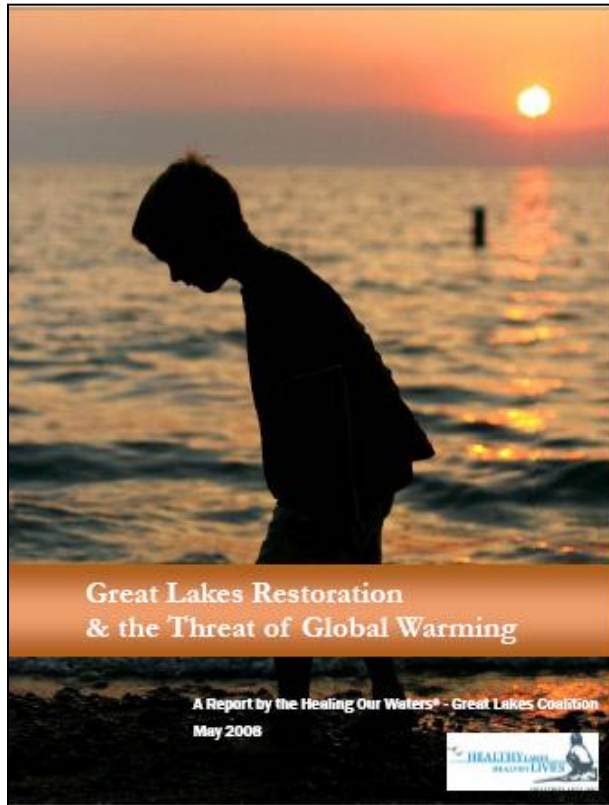


Lake Michigan off Chicago is far less icy than in years past, one of several reasons for dropping water levels in the Great Lakes. (By Kari Lydersen -- The Washington Post)

[Enlarge Photo](#)

[Buy Photo](#)

# Climate Change Impacts Shipping



“Climate change could further reduce scant ice cover observed in recent winters, increasing evaporation rates and dropping water levels in the five lakes that collectively make up 20 percent of the world's surface fresh water.”

“Last year, Lake Superior water levels receded to their lowest in 77 years before rebounding.”

“Global warming could lower lake levels by up to 3 feet (1 meter) over the next century.”



# 7 Climate Change Risks

**Regulatory “price on carbon:”** Carbon caps or taxes

**Litigation:** Lawsuits for GHG pollution

**Supply Chain:** Suppliers passing on carbon costs and risks

**Physical:** Damage to assets from severe weather – yours, suppliers’, or customers’

**Competition:** Rivals develop climate-friendly products and technologies first

**Reputation / Revenue:** Backlash from consumers, markets, and important stakeholders if do not react

**Access to Capital / Threat to Market Value:** Viewed as “risky” by investors and banks

# Risk of Losing Awakened Consumers

The “Goracle factor” + Hurricane Katrina  
+ Unpredictable energy prices + Weird weather + + ...



- **Until 2006:** 70-80% of consumers said they were are switching to “green” companies, but only **10%** actually did
- **2006:** **20%** buy green (Sustainable brand study by egg, March 07)
- **2008:** **33%** buy green (Globescan and McKinsey Study, 2008)



Cover collage from Deloitte & Touche “Tax Wednesday” seminar, March 26, 2008

# Most Are Ready To Alter Lifestyle?

83% of people believe that individuals will “definitely or probably” have to adjust their lifestyles to help reduce the climate-changing gases they produce

50% are ready to pay more in energy taxes

Respondents in countries opposed to increasing energy taxes were much more willing to take on higher taxes if the revenues were used to develop cleaner energy sources, while at the same time other taxes were reduced by the same amount



# Public Awareness Growing in U.S.



1/3 of Americans say global warming is the world's single largest environmental problem, 2X last year

(Survey by the Washington Post, ABC News and Stanford University, April 07)

75% consider environmental and social aspects in deciding what to buy; 1/3 are willing to pay more for those benefits  
(Sustainability: The Rise to Consumer Responsibility report, The Hartman Group, Jan. 09)

50% of U.S. consumers consider at least one sustainability factor in selecting consumer packaged goods items and choosing where to shop for those products

(Survey of 22,000 Americans by Information Resources, Dec 07)

30% of American consumers are willing to pay a premium of up to 20% for “green” products

(The Natural Marketing Institute, July 07)

# Together Campaign

Launched in May 07 in Europe, with Tony Blair  
In first year, helped avoid 522,000 tonnes of CO2 and  
saved over \$200M on household energy bills.

Focuses on consumer / individual actions

Supported by celebrities, world leaders, business leaders:

Tony Blair, Gordon Brown, Leonardo DiCaprio, Boris Johnson,  
etc;

Launched June 08 in USA with  
Michael Bloomberg, Arnold Schwarzenegger, Ban Ki-moon,  
JP Morgan Chase, Target Corp., etc.

Supported by The Climate Group

Going global to Australia, India, China next



# 1Sky Campaign

Consortium of over 60 environmentalist, social justice, business, and civil society organizations

Created in 2007 to focus the power of millions of concerned Americans on a single goal:

**Bold federal action by 2010 that can reverse global warming.**

Supports "iCap" Bill aligned with scientific consensus on the measures needed to address the climate crisis, introduced in the House June 08 by Rep Ed Markey that calls for:

**Emissions cuts of 85% by 2050.**

**Moratorium on traditional coal plants**



# Apollo Alliance

Coalition of business, labor, environmental, and community leaders representing over **17M Americans**

Created in 2004.

Inspired by Apollo space program

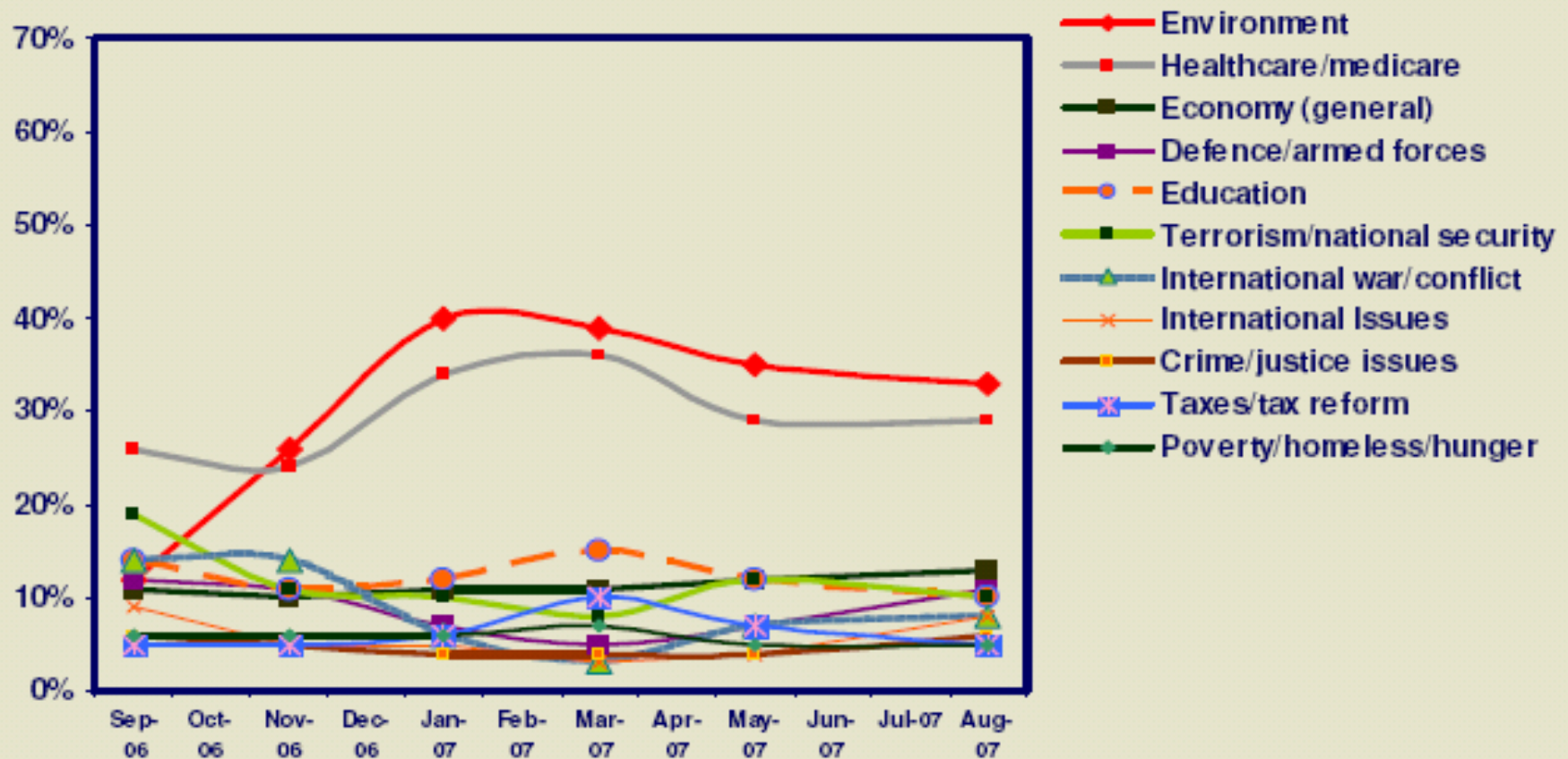


Working to catalyze a **clean energy revolution** in the U.S. to reduce dependence on foreign oil, cut the carbon emissions that are destabilizing the climate, and expand opportunities for U.S. businesses and workers.

Promotes policies and initiatives to speed investment in **clean energy technology and energy efficiency**, put millions of Americans to work in well-paid, **green collar jobs**, and make the U.S. a global leader in clean energy products and services.



# Public Awareness Growing in Canada



Environics 2007



# Growing Demand for Organic Food



Worldwide sales of organic food and beverages:  
\$23B in 2007 (Euromonitor International, Jan. 09)

U.S. sales of organic food and beverages:  
45% of worldwide sales: \$10B in 2007

Typical annual growth rate of 20-30% eased to about 5%  
in Dec. 08 in U.S. in tough economy (The Nielsen Co, Jan. 09)



# Food With a Message



“Climate Neutral from cow to cone”

Raises awareness of climate change

Promotes [Climate Change College](#)

that Ben & Jerry helped establish



For the “enlightened snacker”

Sun Chips [“Small Steps Sweepstakes”](#)

Sun Chips plant in Modesto, CA, uses a field of [solar concentrators](#) for heat

Frito Lay purchases [renewable energy credits to offset 100% of electricity](#) used in its U.S. facilities

# People Care About Social Causes

## U.S. Consumers Care

85% say they would switch to another company if a problem with **business practices** was uncovered

87% would switch from one brand to another (price and quality being about equal) if the other brand is associated with a **good cause**, up 31% since 1993

## U.S. Employees Care

72% said they wished their employers would do more to support a **social issue**, up 38% since 2004



## Top Issues

Health (80%)

Education, **environment**, and economic development (77%)

# “Greening” of American Consumers

- 17% “Green Gurus:” Empowered to make change
- 24% “Conscientious Citizens:” Want to give back to community
- 24% “Guidance Seekers:” Open-minded but no personal stand
- 17% “Bystanders:” Overwhelmed
- 18% “Hype Haters:” Want evidence they can make a difference

84% “Willing to change lifestyle for the good of environment”

## Why?



82% “It’s good for the environment”

78% “It helps future generations”

78% “It’s healthy”

78% “It’s the right thing’ to do”

73% “It fits with my morals or beliefs”

# Green Shopping Trends

**Body Shop Survey** of 9,500 U.S. / Canada consumers (July 08)

- 76% say **company ethics and behavior** influence purchasing choices more than 5 years ago
- 70% identified quality of goods and **brand trust** as their purchasing criteria
- 39% cited corporate ethical reputation as buying criteria

**ICOM Survey** of 6,036 Americans (March-April 08)

- 62% **purchase household green products.**
- People 55+ years old purchase 2 X the average American

**WorldofGood.com** launched by eBay's (Sept 08)

- 5 product categories like food, house ware, and clothing
- Includes “**Goodprint**” and “**Trustology**” info about product materials, sourcing, and suppliers’ eco-social goals.

# Optimistic “Green” U.S. Consumer Trends, Even in the Recession

- 80% say are still buying green products and services  
(2009 Study Opinion Research Corp.)
- 34% say are more likely to buy environmentally responsible products today; another 44% indicate their environmental shopping habits have not changed  
(2009 Cone Consumer Environmental Survey).
- 53% say are willing to pay a premium for “green” TVs; 89% say energy efficiency will be a factor choosing next TV
- 77% of consumers describe themselves as “green”  
i.e. actively living their lives consciously of their health and environment; 57% say made a green purchase in the past 6 months  
(2009 Survey by Yahoo!)

# Employee Risks



40% of MBA grads rated **CSR** as a an “extremely” or “very” important company reputation measure when job hunting (Hill & Knowlton Jan 08)

92% of students and entry-level hires seek an environmentally friendly company  
(MonsterTRAK.com survey, Nov 07)

83% of employees in G7 countries say company’s positive **CSR reputation** increases their **loyalty**  
(GlobeScan 2006)

83% of employees in G7 countries say company’s positive **CSR reputation** increases their **motivation**  
(GlobeScan 2006)



# Americans Support Green Housing

- 71% would pay \$5 / month **property tax** to support a local subsidy to encourage homeowners to replace old furnaces, water heaters, air conditioners, light bulbs and insulation
- 69% would pay \$8.50 more a month for local regulations requiring electric utilities to produce at least 20% of their electricity from **renewable energy sources**
- 68% would support changing their city or town's zoning rules to **decrease suburban sprawl** and concentrate new development near the town center
- 65% would support changing their city or town's zoning rules to require neighborhoods have a **mix** of housing, offices, industry, schools and stores close together





# “Green” Buildings Trend

Buildings use 40% of world's energy  
and cause 24% of CO<sub>2</sub> emissions  
(International Energy Agency, Mar 2008)

Even The Biggest Boxes Can Go Green

Green Futures



Green Homes Save Money, Make Owners Happier

GreenerBuildings.com



Drake Landing Solar Community



VANCOUVER  
VALUATION  
ACCORD

Dockside Green, Victoria



94% of North Americans prefer to work in ‘green’ buildings

(Mortgage Lenders Network, 2006)

# Sustainable Building is “Hot”

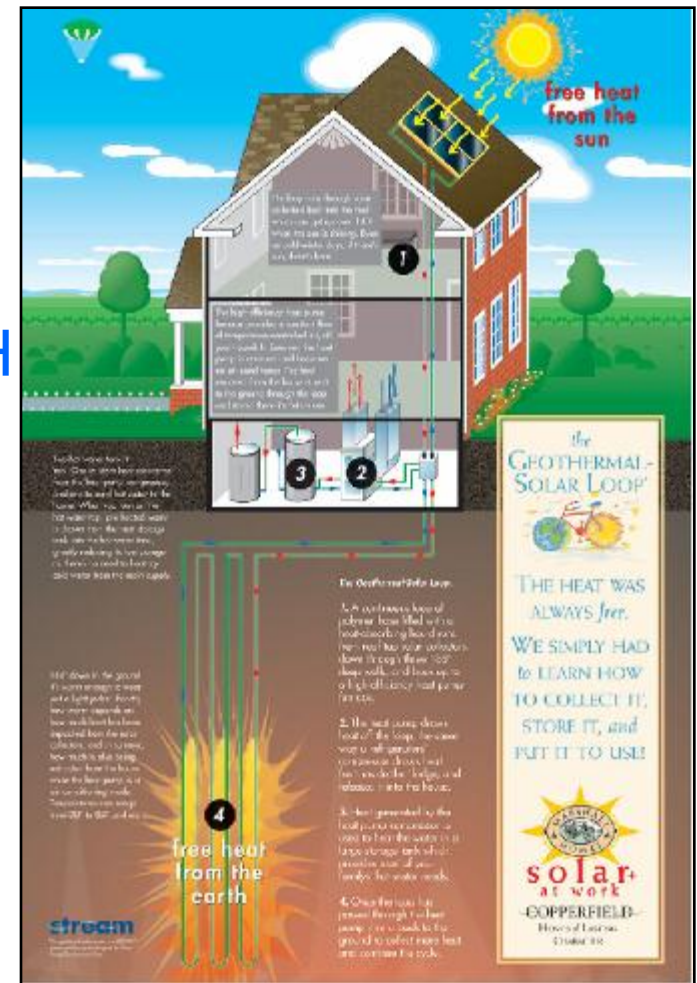
- **Marshall:** Geothermal option for Copperfield homes in Oshawa
- **Rodeo:** 34-house EcoLogic **LEED-Platinum** enclave in Newmarket
- **Monarch:** 196-unit Evergreen **LEED-H** brownfield project in Scarborough

Corporate America Embraces Green Practices, Study Shows

GreenBiz.com



VANCOUVER  
VALUATION  
ACCORD



94% of North Americans prefer to work in ‘green’ buildings  
(Mortgage Lenders Network, 2006)

# Green Building Costs / Benefits

Costs of “green” building are often overestimated by 300%:  
17% premium vs. 2-5% premium

(2007 global survey of 1,400 building professionals by WBCSD)

By 2020, CO<sub>2</sub> emissions from building energy use can be  
reduced by 29% at no additional cost

(IPCC Fourth Assessment Report, 2007)

Existing technologies combined with common sense design  
can increase energy efficiency by 35% and  
reduce heating costs by 80% for the average building.

(United Technologies Corporation CEO, George David)



# Green Building Productivity Gains

## **Melbourne's Council House 2 (CH2)** (2008)

Cost \$52M in 2006, including extra 20% for green features

Six star Green Star rating (highest)

Anticipated 4.9% productivity gain, particularly from flow of 100% fresh air throughout the building, saving \$1.1M a year  
However, an early 2008 audit found **8-10% productivity gain**, saving more like **\$2 million a year**

Reduces the payback period from 10 years to 7

## **Heschong Mahone Group Productivity Studies** (2003)

Improved daylight illumination: **13%** of the improvement

Pleasant view: **10-125%** of the improvement

Decreased glare: **15-21%** of the improvement

Increased Ventilation: **4-17%** of the improvement and **9-50%** of the reduction in sickness / absenteeism



# Green Building Business Case

Figure 3  
Financial Benefits of Green Buildings  
Summary of Findings (per ft<sup>2</sup>)

Category	20-year Net Present Value
Energy Savings	\$5.80
Emissions Savings	\$1.20
Water Savings	\$0.50
Operations and Maintenance Savings	\$8.50
Productivity and Health Benefits	\$36.90 to \$55.30
<b>Subtotal</b>	<b>\$52.90 to \$71.30</b>
Average Extra Cost of Building Green	(-3.00 to -\$5.00)
<b>Total 20-year Net Benefit</b>	<b>\$50 to \$65</b>

Source: Capital E Analysis

# World Scientists' Warning, 1992

## World Scientists' Warning to Humanity (Nov. 1992)

Signed in 1992 by 1,700 scientists,  
including 102 Nobel Laureates

Humans are stressing the atmosphere, water resources,  
oceans, soil, forests living species

“We ... warn all humanity of what lies ahead.  
A great change in our stewardship of the earth,  
and the life on it, is required,  
if vast human misery is to be avoided  
and our global home on this planet is not to be  
irretrievably mutilated.”



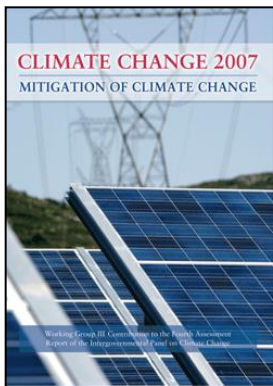
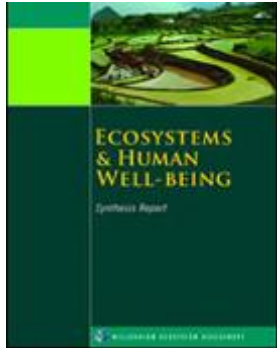


# World Scientists' Warning, 2005 & 2007

## UN Millennium Ecosystem Assessment (Mar. 05)

15 of 24 (60%) of the world's ecosystems are being degraded or used unsustainably

“Human activity is putting such strain on the natural functions of Earth that the ability of the planet's ecosystems to sustain future generations can no longer be taken for granted”



## IPCC Report (Feb 07)

Signed by 2,500 of world's leading scientists

90% probability that humans are causing climate change; more dire predictions

# IPCC Synthesis Report, 2007

Temperatures are likely to rise **1.1-.4.0 degrees Celsius** and sea levels by 18-59 cms (7- 23 ins) by 2100

Warming could lead to some **abrupt or irreversible impacts**

**20-30% of species** will be at increasing risk of extinction if future temperature rises exceed 1.5 to 2.5 Celsius above 1999

Emissions of GHGs would have to **peak by 2015** to limit global temperature rises to **2.0-2.4 Celsius** over pre-industrial times; then drop by **50-85% by 2050**

Costs of fighting warming will be 0.12%-0.06% of global GDP per year until 2030. In the most costly case, that means a **loss of GDP by 2030 of less than 3%**



INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE





# World Scientists' Warning: GEO-4

## 4th Global Environment Outlook (GEO-4) (Oct 07)

By 390 experts for UNEP

“World leaders must propel the environment to the core of decision-making to tackle a daily worsening crisis. The need couldn't be more **urgent** and the time couldn't be more **opportune**, with our enhanced understanding of the challenges we face, to **act now to safeguard our own survival and that of future generations.**”

"The systematic destruction of the Earth's natural and nature-based resources has reached a point where the economic viability of economies is being challenged -- and where the bill we hand on to our children may prove impossible to pay,"



# Communicating the Business Case for Sustainability

## PRESSURES FROM ECONOMISTS AND INVESTORS

Slide Subset 4

# Economists' Warning, 1997

## Economists' Statement on Climate Change

(Feb. 1997)

Signed by 2,000 economists, including 6 Nobel Laureates  
Acknowledged that humans are causing climate change

1. Climate change poses significant **economic, geopolitical,** environmental, and social risks
2. Preventive steps are justified; **Benefits to economy outweigh the costs** of those steps
3. **Market-based mechanisms** are most efficient way to slow climate change – implement an international **cap-and-trade** system and **carbon taxes**

# Warnings from Economists

## Stern Review Report (Oct 2006)

Former World Bank chief economist, Nicholas Stern

Quantified warnings in the 1997

*Economists' Statement on Climate Change*

### 1. **Cost of climate change mitigation:**

1% of annual global GDP by 2050  
if we act now; 5-20% if we act later

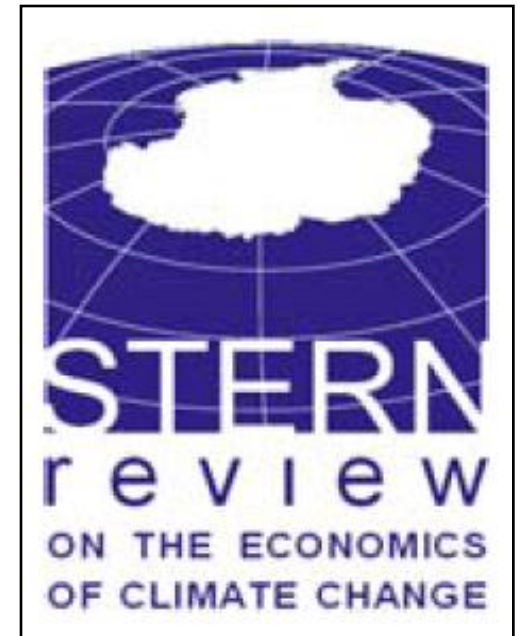
### 2. **Benefits of \$2.5T** if we act now; global depression if we do nothing

### 3. **Must stabilize GHGs:**

Use carbon taxes and / or  
a cap-and-trade system;

deploy low-carbon technologies;

80-90% below 1990 levels by 2050 in developed countries



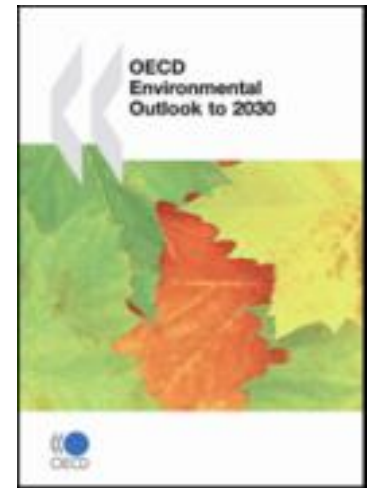
# OECD Report

World Organisation for Economic Cooperation and Development (OECD) report says solutions to the planet's environmental challenges were both available and affordable

## 1. **Cost of climate change mitigation:**

1% of annual global GDP by 2030 if we act now; 97% growth vs. 99%

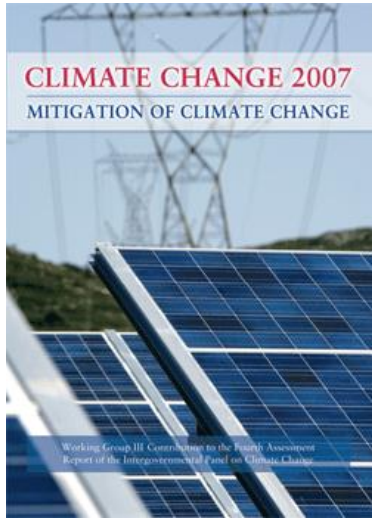
## 2. **Priority areas:** Climate change, biodiversity loss, water scarcity, pollution, toxic chemical poisoning.



“Without new policies, global GHG emissions are projected to increase by over 50% to 2050.

This could cause the global temperature to rise above pre-industrial levels by 1.7-2.4° by 2050.”

# Economic Impact Estimates



## IPCC (May 07)

Based on work of 2,500 scientists

Costs of stabilizing GHGs:

-0.2% to 3% of global GDP in 2030;

-1% to 5.5% by 2050

## U.S. EPA (July 07)

Asked by Senators Lieberman & McCain, to analyze economic impact of their Climate Stewardship and Innovation Act which would cut U.S. GHGs below 65% 1990 levels by 2050

Would cost 1.6% of US GDP in 2030 and up to 3.2% by 2050

Create carbon market of \$25B by 2030 and \$57B by 2050.

# Threat of Government Regulations

## 1. Carbon Caps



Caps set quantity of CO<sub>2</sub>, allow carbon price to vary  
Caps absolute carbon emissions, by company  
Spurred by Kyoto Protocol  
Leads to **Cap-and-Trade** systems  
e.g. European Trading System

## 2. Carbon Taxes



Taxes set carbon price, allow quantity of CO<sub>2</sub> to vary  
Taxes burning fossil fuels - coal, petroleum products  
Taxes bad thing vs. good thing like income  
May be revenue neutral

## 3. Carbon Intensity Targets (Weak)



Caps carbon / product (vs. cap / company)



# The Climate Registry

Established by

**51 North American states and provinces:**

39 States + DC, 5 Canadian provinces (BC, SK, MB, ON, QC), 3 Native American tribes, 2 Mexican states (Mar 07)



Based on California Climate Action Registry

**54 Founding Reporter organizations,** including

Alcoa, Shell Oil, Austin, Seattle, Duke Energy, Xcel Energy, PG&E, Ecos Consulting, Jacques Whitford, South Carolina Department of Health & Environmental Control, U.S. Postal Service (Jan 08)

**Pledge to measure, independently verify, and publicly report their GHG emissions**



# Carbon Intensity

Regulates carbon / product,  
not absolute cap / company

## Sydney Declaration



Non-binding "aspirational targets" to reduce  
APEC's 2005 level of "energy intensity"  
by 25% by 2030 (Sept 07)

## U.S. Goal



Voluntary 18% intensity reduction by 2012,  
but absolute rise of 12% forecasted

<b><i>Carbon Intensity</i></b>	<b><i>Product Volume</i></b>	<b><i>Absolute Emissions</i></b>
3T of CO2 / Product	1,000 Products	3,000T of CO2

# Carbon Intensity

Regulates carbon / product,  
not absolute cap / company

## Sydney Declaration



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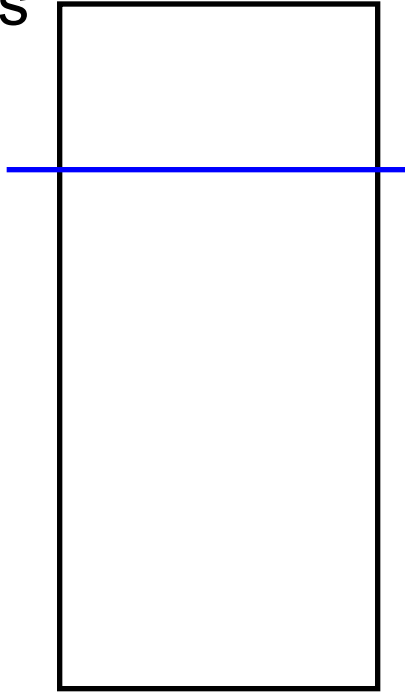
Voluntary 18% intensity reduction by 2012,  
but absolute rise of 12% forecasted

<b><i>Carbon Intensity</i></b>	<b><i>Product Volume</i></b>	<b><i>Absolute Emissions</i></b>
3T of CO2 / Product ↓	1,000 Products ↑	3,000T of CO2 ↑
2T of CO2 / Product ↓	2,000 Products ↑	4,000T of CO2 ↑

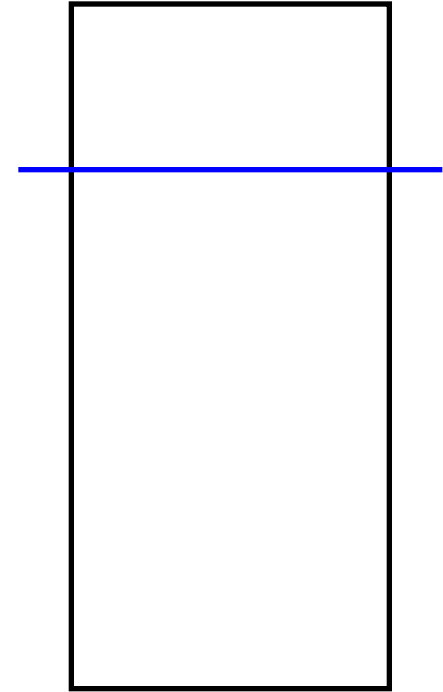
# Cap-and-Trade

Today's Emissions

**Emissions Cap**



Company A



Company B



# Cap-and-Trade

Today's Emissions

**Emissions Cap**

New Emissions

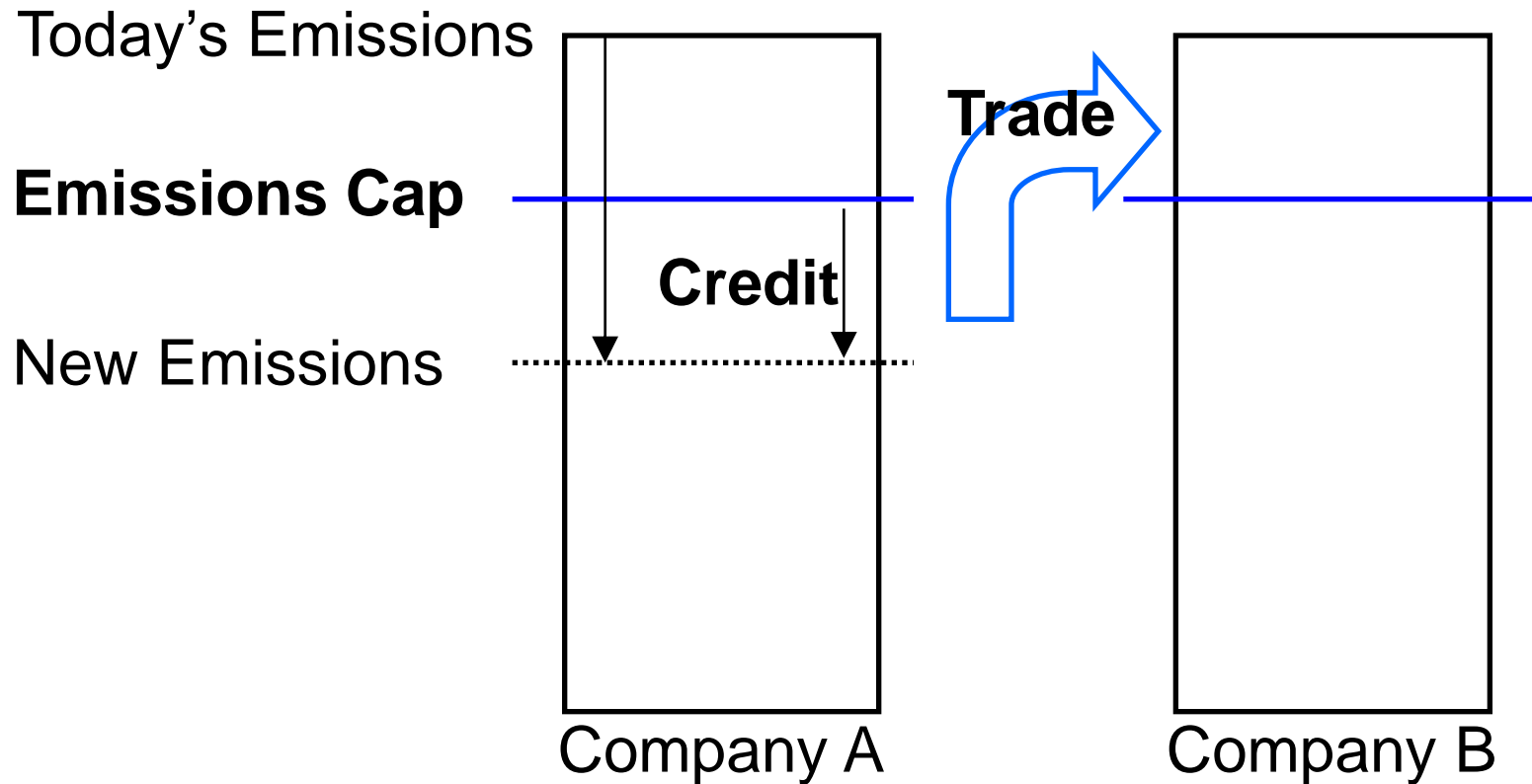
**Credit**

Company A

Company B



# Cap-and-Trade



e.g. [European Union Emissions Trading System \(ETS\)](#)

Capped 11,500 EU firms producing half of emissions  
40 euros/T penalty if exceed cap, rising to 100 euros/T



# Cap-and-Trade Basics

Government sets cap on total emissions

Emission allowances are distributed

Generally 1 ton GHG = 1 allowance

Sources must hold allowances equal to emissions

Sources can reduce emissions and sell allowances

Market finds low cost emission reductions

# Cap-and-Trade Considerations

## Criteria for offsets inclusion

Reductions are real, additional, measurable, verifiable, do not cause leakage of emissions that get pushed out of state/region

## Governance Issues

Coverage, Point of Regulation,  
Cost containment/flexibility mechanisms  
Allowance distribution

## Other Considerations

Equity issues, Leakage, Co-benefits

# Issues with Cap-and-Trade

In theory, delivers certainty of GHG reductions.

BUT

1. Fast-industrializing nations such as **China and India** will not accept a hard cap
2. Uneven carbon pricing of a trillion dollar carbon cost will lead to **carbon leakage**
3. Uneven carbon pricing misses opportunities for economically attractive low-carbon **technology deployment** in fast-industrializing countries like China and India.



# Earth Atmospheric Trust

1. Create a **global cap-and-trade system** for all GHGs
2. **Auction off all emission permits** at \$20-\$80/ton, and allow trading among permit holders
3. **Reduce the cap over time** to stabilize GHG concentrations
4. **Deposit all the revenues (\$0.9 to \$3.6 trillion) into an Earth Atmospheric Trust.** Payments into the fund for the typical US resident producing 20 tons of CO<sub>2</sub> equivalent per year would be \$400-\$1,600.
5. **Return a half the revenues derived from auctioning permits to all people on Earth** in the form of an annual per capita payment: \$71- \$285/capita/yr.
6. **Use the remaining \$400-\$1,600 billion per year to enhance and restore the atmospheric asset, to encourage both social and technological innovations,** and to administer the Trust..

# Harmonized Global Carbon Price

- Single universal price for carbon: \$50/tonne CO<sub>2</sub>-eq phased in over five years, moving to \$100/tonne CO<sub>2</sub>-eq by 2030
- Levied at administratively efficient GHG intensive materials facilities (cement, aluminum, steel, and chemicals) and the key bottlenecks in the fossil energy system: trunk pipelines for gas, refineries for oil, railroad heads for coal
- Verified by IMF annual review
- Provides a source of government revenue without risking loss of international competitiveness
- \$50 billion built-in transfer carrot for LDCs and NICs to use for carbon sinks and mitigation
- Incrementally severe penalties for noncompliance, leading up to countervailing duties on carbon-intensive imports

## OPTION: 13

three choices for 2013 and beyond  
in the face of climate change

Option: 13 White Paper, Nov. 27, 2007

# Harmonized Global Carbon Price: Pros

- Provides fast-industrializing countries with a more predictable carbon pricing and new source of revenue (which rises as carbon emissions rise) rather than the price volatility and economic straightjacket that a hard cap entails
- Avoids carbon leakage that results from uneven carbon pricing (removes the central competitive concern of the US)
- Helps ensure that huge opportunities for deploying cleaner and more efficient low-carbon technologies in fast-industrializing countries are seized upon
- Equitable approach based on the polluter-pays principle
- Built-in annual \$50 billion transfer (based on 5% of the carbon charge levied in industrialized countries) to the least developed countries for carbon sinks and adaptation

## OPTION: 13

three choices for 2013 and beyond  
in the face of climate change

Option: 13 White Paper, Nov. 27, 2007

# Harmonized Global Carbon Price: Cons

- Provides less certainty about the volume of GHG emissions reductions that will be achieved ... SO ... must be joined at the hip with a global GHG emissions target, and adjusted accordingly to stay on track with that target
- If labeled as a tax, is hard to raise taxes ... SO ... 'Tax' increase must be explained as part of a national duty (legal obligation) in the international effort to protect the climate
- Carbon charge could hurt low-income people or increase the size of government ... SO ... it could be made revenue neutral by lowering corporate and personal income taxes along with provisions to offset the impacts of price increases on low-income groups in distributionally neutral ways

## OPTION: 13

three choices for 2013 and beyond  
in the face of climate change

# Why Offset Voluntarily?

1. Meeting corporate GHG targets when internal reductions are not cost-effective or feasible within the time frame
2. Gaining marketplace experience to allow for better credibility about corporate input to greenhouse policy and regulations
3. Preparation for regulatory changes
4. Carbon neutral branding to attract customers.
5. Meeting investor expectations and wish to reduce the risks of a carbon constrained future

# Carbon Offset Examples

Methane capture and destruction from landfill, livestock, or coal mines.

Elimination of industrial GHG emissions

Direct fossil fuel use reduction

Indirect fossil fuel reduction

e.g. renewable energy credits (RECs)

Reforestation-afforestation of native tree species

Avoided deforestation of native trees

Reforestation-afforestation by monoculture

e.g. hybrid poplars

Soil sequestration

Geological sequestration

# Ways of capturing carbon dioxide

- Use a **special enzyme** to turn CO<sub>2</sub> into bicarbonate, which can then be processed into baking soda or some other substance that can be recycled for industrial uses
- **Algae farms or "bioreactors"** near a power plant. The algae consume CO<sub>2</sub> as food and can be harvested later to produce carbon-neutral biofuels
- **Chemicals**, like monoethanolamine, can be used to scrub away CO<sub>2</sub> from a power plant's exhaust stack
- Use near-pure oxygen, also known as **oxy-fuel**, during the combustion process in a fossil fuel power plant to produce a highly concentrated stream of CO<sub>2</sub> exhaust
- **Gasify fossil fuels under intense heat** to produce easily-separable CO, CO<sub>2</sub>, and hydrogen. Collect the CO<sub>2</sub>, but burn the emission-free hydrogen for power generation

# Where to permanently store CO<sub>2</sub>

1. Deep geological storage in porous, stable rock formations
2. In old oil and natural gas wells
3. Deep in the ocean
4. In tree growth through reforestation
5. In char (through pyrolysis of biomass) that's mixed with topsoil



# Problems With Offsets

- Lack of a single **standard**
- Wide range of carbon offset service **providers**
- Long list of possible **projects** which complicate assessment
- Difficulty of **verifying** the actual benefits, especially as historical data is lacking.
- Doing business in **emerging markets** has high transaction costs  
e.g. verifying the effectiveness of the project

# Voluntary Carbon Standard (VCS)

A new global carbon offset standard as a quality assurance check for voluntary offset projects

Launched by The Climate Group, the WBCSD, and the International Emissions Trading Association  
(Nov. 07)

Born out of a two-year consultation among business, government and non-government organizations



# The Top 8 Offset Providers

1. AgCert/DrivingGreen (TM) - Ireland
2. atmosfair - Germany
3. CarbonNeutral Company - UK
4. Climate Care - UK
5. Climate Trust - US
6. co2balance - UK
7. NativeEnergy - US
8. Sustainable Travel/My Climate (TM) - US

# Carbon Credit Cards

Visible signs that climate change is reaching Main Street

## **GE Earth Rewards credit card** (July 07)

GE will invest 1% of purchases in carbon offset projects  
GE and partner AES will offset 10M tonnes of GHG credits annually by 2010, some of which will be purchased by GE itself on behalf of its Earth Rewards customers

## **Barclay Bank's Barclaycard Breathe card** (July 07)

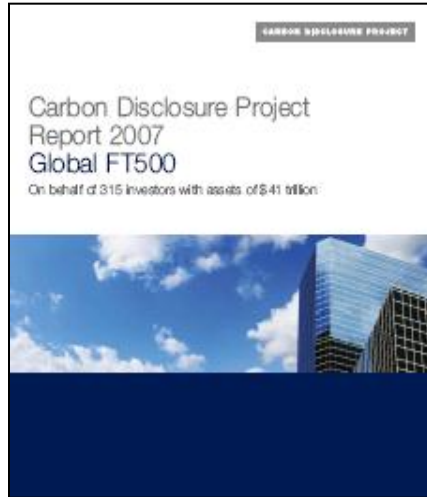
Donate half of all profits to carbon reduction projects

## **Dutch-based Rabobank Climate Card** (Mar 06)

Carbon offsets for purchases

# Risk of Becoming a “Risky Investment”

## Carbon Disclosure Project



	2003	2008
<b>Institutional Investors</b>	35	385
<b>Value of Assets Held</b>	\$4.5T	\$57T
<b>Companies Surveyed</b>	FT500	3,000

Leading, well-positioned companies can gain  
up to **80% increase in value.**

Badly positioned, slow companies have  
up to **65% of their value at risk.**

(Carbon Trust & McKinsey Report: “Climate Change: a business revolution?” 2008)

# Climate Change Impact on Value

Sector	Maximum value creation <b>opportunity</b>	Maximum value at <b>risk</b>
Aluminum	30%	65%
Automotive	60%	65%
Oil and gas (exploration and production)	0%	35%
Oil and gas (refining)	7%	30%
Consumer electronics	35%	7%
Building materials	80%	20%
Beer	0%	15%

# Investors Assess Climate Change Risks

*Climate Change: Business Risks and Solutions* (Marsh, Apr 06)

Climate change is a significant emerging global business risk

*Climate Change: Beyond Whether* (UBS Wealth Management, Jan 07)

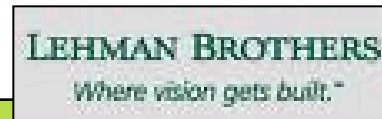
Reveals climate change risks by sector

*The Business of Climate Change* (Lehman Brothers, Feb 07)

Companies not responding quickly to “tectonic force” of climate change face extinction

*Climatic Consequences* (Citigroup, Feb 07)

Predicts “tipping point” in corporate behavior with regard to climate change issues in next few years



# Equator Principles

60 of largest **financial institutions**  
doing 71% of project finance in emerging markets (July 2008);

Require financed projects in emerging markets be socially and environmentally responsible

For \$10M+ projects now (originally for \$50M+ projects)





# The Carbon Principles

Developed by [Citi](#), [JPMorgan Chase](#) and [Morgan Stanley](#); joined by [Bank of America](#) (Apr 2008)

Designed to help lenders understand the regulatory and financial risks of GHG emissions when financing [utility-sector projects](#), such as coal-fired power plants. Intend to use the guidelines to evaluate projects that involve public utilities, not only investor-owned utilities.



# The Climate Principles

Developed by [Credit Agricole](#), [HSBC](#), [Munich Re](#), [Standard Chartered](#), and [Swiss Re](#), in conjunction with the nonprofit [Climate Group](#) (Dec 2008)

The framework will guide the financial and insurance institutions in addressing climate change across their products and services

e.g. Insurers will use the Climate Principles to advise clients on climate risks

e.g. Financiers will ask clients to estimate and reduce emissions from their projects



# Insurer Climate Risk Disclosure Survey

World's first climate risk disclosure requirement

Insurers must disclose climate change risks to investors and regulators, beginning May 1, 2010

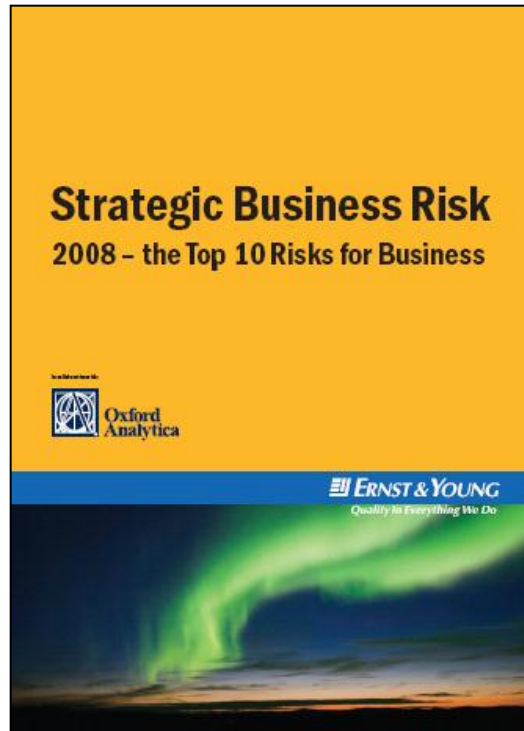
Insurance industry worldwide managed assets exceed \$16T

National Association of Insurance Commissioners (NAIC)  
will require annual filing of

**Insurer Climate Risk Disclosure Surveys** for insurance companies with annual premiums topping \$500M.

- Exposure to risk from extreme weather events
- Changes in risk management and catastrophic modeling
- How are engaging customers and policymakers
- How climate risks are impacting investment strategies

# Environment Is A 'Top 10' Risk



Threat of 'Radical Greening' from stricter regulations, changes in consumer attitudes, and extreme weather

## Other Top 10 risks:

Regulatory and compliance risk; consumer demand shifts; global financial shocks; aging consumers and workforce; emerging markets; energy shocks; industry consolidation / transition; execution of strategic transactions; cost inflation

“Properly approached, the process of risk management can add value even if, fortunately, the event never happens..”

# 5 Heavyweight U.S. Investment Banks



Goldman Sachs

Lehman Brothers



Morgan Stanley

Merrill Lynch



Bear Stearns

# Goldman Sachs



Second largest American securities firm  
1st major investment bank to adopt a comprehensive  
environmental policy

Has invested \$1.5B in clean energy projects (Nov 06)  
Integrated ESG factors into its analyst research (2004);

Helped broker TXU buyout – transformed from a coal-burning  
eco-villain into more environmentally responsible utility

However, still has some of dirtiest energy companies and  
subprime market holdings

# Morgan Stanley

Will spend \$3B to reduce GHGs 7-10% below 2006 levels by 2012 through energy efficiency and new green buildings  
Will be carbon neutral by 2008 by using carbon offsets (Oct .06)

## Morgan Stanley Carbon Bank (August 2007)

Integrated carbon verification and offsetting services  
Partner with Det Norske Veritas (DNV), an international provider of emissions data certification,  
to help clients become carbon neutral

Help clients calculate carbon footprint and buy offsets  
Some offsets from Morgan Stanley's own emission reductions  
Some offsets from MGM International, an emissions reduction project developer in which Morgan Stanley owns a 38% stake

# Bank of America / Citigroup



## Bank of America

Second largest U.S. bank

\$3K rebates on employee hybrids (Jun 06)

**\$20B** over 10 years to support environmentally friendly activities and reduce global warming

Reduced mortgage rates on energy efficient homes (Mar 07)



## Citigroup

Largest U.S. bank

Will reduce GHGs from its 14,500 properties by **10% by 2011**  
(Jan 06)

**\$50B** to environmental projects over 10 years such as green buildings, clean tech, climate-friendly mortgages and loans  
(May 07)



# Banks' Climate Change Governance



## CERES Report (Jan 08)

Ranked 16 U.S. and 24 non-U.S. banks

1. Setting internal GHG reduction targets
2. Boosting climate-related equity research
3. Elevating financing for clean energy projects

### Score on Ceres' Climate Change Governance Checklist

HSBC (70)	Morgan Stanley (49)
ABN AMRO (66)	Lehman Brothers (26)
Barclays and HBOS (61)	Bank of Nova Scotia (26)
Deutsche Bank (60)	TD Financial (25)
Goldman Sachs (53)	Bear Stearns (0)
Merrill Lynch (52)	

# Investors Taking Action ... Together

## Letter to Insurance Companies

20 leading U.S. investors

Urged 30 largest NA insurance companies to **disclose their financial exposure from climate change** and steps they are taking to reduce those financial impacts. (Dec 05)

## Global Framework for Climate Risk Disclosure

14 leading institutional investors

Guidance re information needed on **financial risks posed by climate change** (Oct 06)

## SRI Funds Growing

US SRI assets grew **18%** from 2005 to **\$2.7T** in 2007, vs. 3% for all investment assets; **1/9** of \$25.1T assets

# Global Roundtable on Climate Change



Initiative by the Earth Institute at  
New York's Columbia University

Say climate change as a growing risk to business and society

Call on governments to set limits on GHGs

Urge governments to place a price on CO2 emissions  
released by power plants and factories

Vague on how much, and how cuts should be allocated  
among developed and developing nations

Signed **100 top executives** from a range of industries  
e.g. air transport, energy, technology, banking, insurance  
e.g. Swiss Re, Allianz SE, Munich Re, Air France, Alcoa, GE,  
Citigroup, DuPont, Volvo, American Electric Power,  
World Petroleum Council

# Clean Tech: Magnet for Venture Capital

## “Green Gold Rush”

Global investment in renewable energy surged 60% to \$148B in 2007,  
(UNEP report, July 08)

## 2007-2017 Global Projections for Clean Tech

(Clean Edge forecast, March 08)  
from \$77B to \$254.5B (4X)

- Biofuels (ethanol & biodiesel): from \$25.4B to \$81.1B
- Wind power: from \$30.1B to \$83.4B
- Solar photovoltaics: from a \$20.3B to \$74B
- Fuel cell / distributed hydrogen: from \$1.4B to \$15.6B



# Investor Network on Climate Risk (INCR)

65 institutional investors, \$4T in assets



Asked SEC to require listed companies to **disclose climate change risks** in their financial performance (June 06);

**Climate Watch List** of worst 10 GHG emitter companies got shareholder resolutions on climate change (Feb 07);

*Capital to Capitol* report: Request that Congress **cut GHGs 60-90% below 1990 levels by 2050** (Mar 07)

# Investor Voices on Climate Change

- U.S.



- Europe



- ANZ



130 leading investors ...assets worth \$6.4T

Urge world leaders to produce a post-Kyoto binding agreement to **reduce global GHG emissions by 50 to 80% by 2050** (Nov 08)

"The climate crisis is a multi-generational challenge that requires strong national and international policies immediately. World leaders must shun the excuse that it is too expensive to act to curb global warming. It is **too expensive not to act.**"

# NY Investigating Climate Risk Disclosure



Subpoenas issued by  
NY Attorney General Andrew Cuomo (Sept 07)

Demand internal documents from 5 power companies:  
AES Corp, Dominion Resources, Dynegy, Xcel Energy,  
and Peabody Energy

Want to ensure the companies' investors  
received adequate information about  
possible financial liabilities of the CO2 emitted  
from planned power plants

# Shareholder Resolutions

## 57 shareholder resolutions on climate change in 2008 (vs. 43 in 2007)

- 25 withdrawn after companies agreed to firm commitments to address climate change
- 26 resolutions that proceeded to votes received a record average support of 23.5%, up from 21.6% in 2007
- The resolutions were filed by state and city pension funds and labour, foundation, religious and other institutional shareholders with more than \$300 billion in assets.

## Freshfields Report

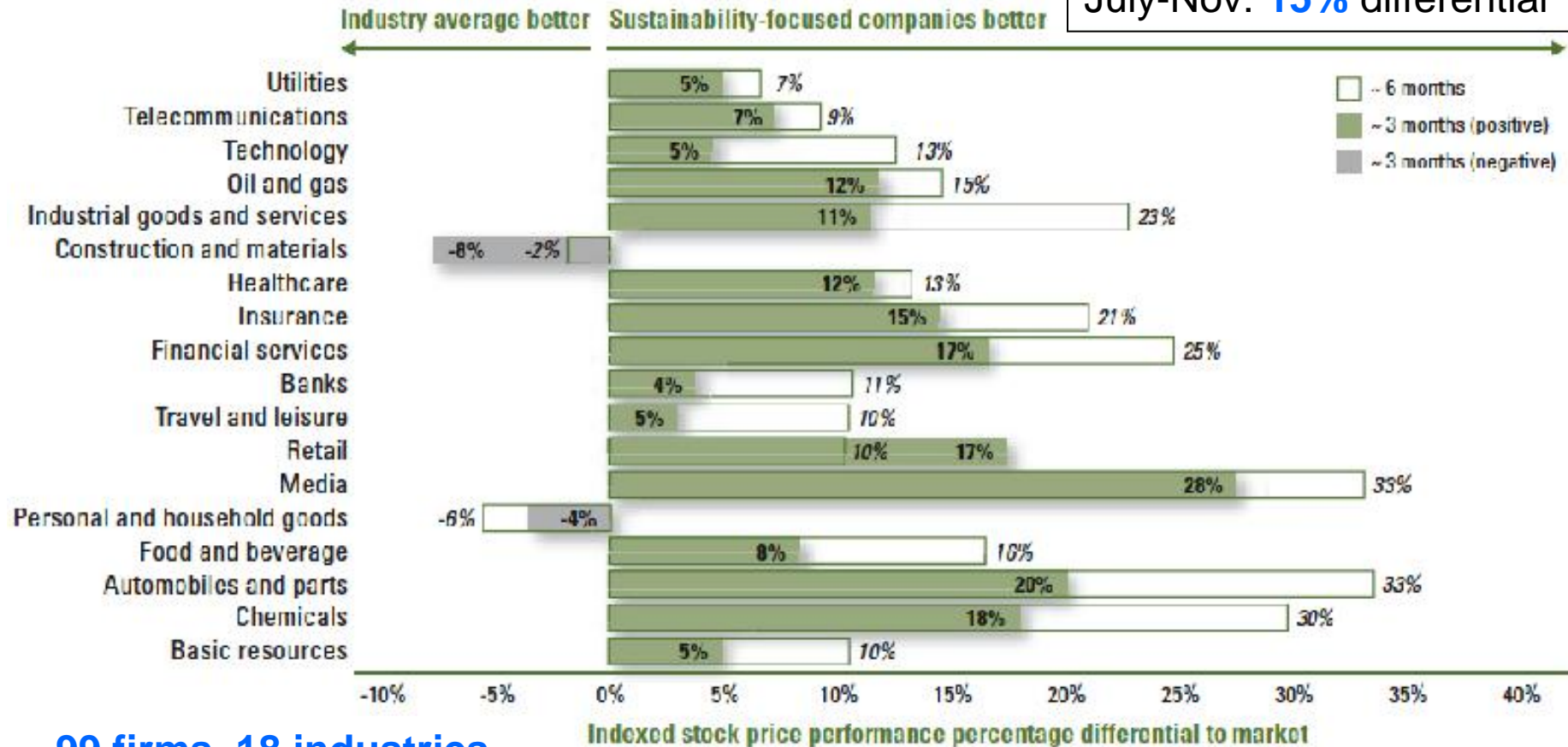
Dispels the myth that laws prevent fiduciaries from considering CSR issues; in fact, the law sometimes requires them to



# Sustainable Enterprises Outperform

**FIGURE:** Sustainability-focused companies outperform peers

Sept to Nov: **10%** differential  
July-Nov: **15%** differential



**99 firms, 18 industries**

*Notes: Indexed stock prices at ~ 3 months – September 8, 2008 and ~ 6 months – May 19, 2008 to current date, November 24, 2008. Percentage performance differential calculated by taking the percentage point difference of averaged sustainability companies' indexed performance to the market indexed performance over the market indexed performance. Sustainability companies include DJSI World 80 2008/2009 + DJSI 2008 Super sector Leaders + Goldman Sachs SUSTAIN focus list for mature industries.*

*n=99 sustainability companies*

*Sources: Bloomberg; A.T. Kearney analysis*

**A.T. Kearney report, Feb. 2009: "Green Winners: The Performance of Sustainability-Focused Companies in the Financial Crisis"**

# Executives Urge “Green” Recovery



“Green solutions and sustainable strategies are smart business—for everyone. The greener we get, the more we can reduce costs and boost efficiency. The more we reduce costs, the more productive a business can become and the better we can weather the maladies of the global business market.”

(Ursula Burns, President Xerox, BusinessWeek, Jan 09)



“Those organizations that have built sustainability into their structure properly will come out of this better than those who saw it as a public relations measure.”

(Richard Spencer, Institute of Chartered Accountants in England and Wales (ICAEW), Feb 09)

# WEF Urges “Green” Recovery

"If governments are spending money for a stimulus package, why not spend it on renewables? It stimulates the economy short term and in the long term it's sustainable.



You kill two birds with one stone.“

(IEA Executive Director Nobuo Tanaka, Reuters, Jan 09)

Investments and policies to combat climate change will put the world economy on the road to recovery and help cool the planet in the process



(World Economic Forum, Reuters Jan 09)

Clean energy investment needs to more than triple to \$515B a year to stop planet-warming emissions reaching levels deemed unsustainable by scientists



(World Economic Forum, Reuters Jan 09)

# Global “Green” Energy Stimulus

World governments have committed more than **\$200B** toward technologies to cut dependence on fossil fuels; **250 new policies since July 2008 in USA, EU, and Asia** to support solar / wind power and climate-change mitigation



**\$106B** (14% of the \$787B stimulus package) for green energy including tax breaks, loan guarantees and incentives; loan guarantees for renewable energy: 28 states have Renewable Portfolio Standards (RPS)



**\$60B** for green measures, including \$17B for energy efficiency and \$19B for clean cars; attractive feed-in tariffs in some countries

# Economic Recovery –“Green”?

1. **Save cash:** Fast eco-efficiencies on energy, water, materials, waste handling; buy local; tele-travel
2. **Increase productivity:** Engage / energize employees
3. **Innovate / Reinvent:** Create new products, services, processes, organizations for revenue and market growth
4. **Follow the stimulus money:** Grants, tax credits, subsidies
  - **R&D** in clean, renewable, secure energy
  - **Manufacturing** stimulus for green cars, trucks, buses, trains, wind turbines, solar installations
  - **Infrastructure** “shovel-ready” projects to renew roads, bridges, water systems; smart electrical grid; transit
  - **Building retrofits** - public and private buildings

# Execs Need \$ Prod on Climate Change

- 73% plan to make energy efficiency a priority in the next 2 yrs
- 47% will focus more on cutting CO2 emissions and energy usage, in order to cut costs
- 27% will focus on creating low carbon products to boost sales
- 67% predicted climate change will slip down the agenda as the economic crisis continues



56% say more regulation is needed to get business to act on climate change

Need \$38-64/t carbon price to have a significant impact on energy usage, up from current \$11/t in the EU Emissions Trading Scheme

# President Obama on Climate Change

**We have a "planet in peril"**



Wants to cut U.S. GHG emissions back to **1990 levels by 2020**

-- they are now up 14% since 1990

Then cut to **80% of 1990 levels by 2050**

Pushing for massive stimulus packages that should help a shift from fossil fuels by creating "green" jobs

Wants to allow states to limit GHGs from cars



# U.S. 2010 Cap-and-Trade Budget

Assumes **federal cap-and-trade system** starts in 2012

Starts at \$15 / tonne of CO<sub>2</sub>, and rises

**\$646B revenue**, 2012-2019 (about \$80B/yr)

Will be used to fund:

1. \$150B in clean energy technology investments
2. Tax credits to help transition to a less carbon-intensive economy – i.e. “Cap-and-dividend” approach





# U.S. \$787B Economic Stimulus Bill

Includes

\$62B for green initiatives

\$20B in green tax incentives

No new funding for nuclear and coal projects



- \$11.0B for smart grid
- \$ 7.5 B for renewable energy and transmission-lines
- \$ 4.5B for energy-efficiency in federal buildings
- \$ 6.3B for local government energy-efficiency grants
- \$10.0B for retrofits for low-income housing
- \$ 8.4B for transit capital assistance programs
- \$ 8.0B for Amtrak and intercity passenger rail
- \$ 0.5B for green jobs training programs

# Green Retrofits ➡ Job Creation

“Every **\$1B** capital investment in energy and efficiency would create approximately **9,500 building-retrofit jobs**. Such an investment would also create **1,200 jobs from building and installing solar photovoltaic panels** and about **900 wind-energy jobs**”

“In the jobs-creation sweepstakes, retrofitting buildings runs away with it. That's about **10-to-1 over any other investment.**”

~ Lester Brown, Earth Policy Institute founder  
(Nov 08) ~



# Potential Green Jobs in U.S.

Study by Global Insight for US Conference of Mayors (Oct 08)

**2008: 750,000 green jobs**

419,000 in Engineering, Legal, Research and Consulting

127,000 Renewable power generation

57,500 in Agriculture and Forestry

**2038: 4.2M jobs - 5 times today; fastest growing job segment**

1.23M in renewable electricity production

1.50M in alternative transportation fuels

1.40M in engineering, legal, research, and consulting

0.81M in commercial and residential Retrofits

## 2038 Assumptions

40% alternative electricity; retrofits reduce electricity demand by  
35% in existing buildings; 30% alternate fuels.



# Crisis is Resetting the Economy

“If you think this is only a cycle, you’re just wrong. This is a permanent reset. There are going to be elements of **the economy that will never be the same, ever.**”

“The NA companies best positioned to tap that growth will be the ones that double-down on investments in innovation and technology during the downturn. **If you keep investing in technology and innovation in the worst of times, your competitive advantage grows.**”



(Jeff Immelt, CEO, General Electric, Feb 09)

# Tom Friedman: The Inflection is Near?

“We have created a **system for growth** that depended on our  
building more and more **stores**  
to sell more and more **stuff**  
made in more and more **factories in China**,  
powered by more and more **coal**  
that would cause more and more **climate change**  
but earn China more and more **dollars**  
to buy more and more **U.S. T-bills**  
so America would have more and more **money**  
to build more and more **stores**  
and sell more and more **stuff**  
that would employ more and more **Chinese ...**



**We can't do this anymore.”**

# Tom Friedman: The Inflection is Near?

**“What if the crisis of 2008  
represents something much more fundamental  
than a deep recession?”**

What if it's telling us that  
the whole growth model we created over the last 50 years is  
simply unsustainable economically and ecologically  
and that  
2008 was when we hit the wall —  
when Mother Nature and the market both said: ‘No more.’”



# Paul Gilding: The Great Disruption

We were entering a **global crisis** with a simultaneous and connected, economic and ecological crash ...

**The Great Disruption.**

(Paul Gilding, July 2008 letter to 1,000 worldwide contacts)



Any doubt that now is the time for the real debate about the economic crisis – that is, about whether there is **something much deeper going on** – evaporated for me this week.

I discovered there is a fast and furious discussion happening around the world that will now rapidly shift into the mainstream.

So get ready for it and get ready for its consequences.

(Paul Gilding, “The End of Economic Growth,” The Business Spectator, Mar. 13/09)

# Joe Romm on Real Wealth

“We created a way of raising standards of living that we can’t possibly pass on to our children.

We have been getting rich by depleting all our natural stocks — water, hydrocarbons, forests, rivers, fish and arable land — and not by generating renewable flows.”

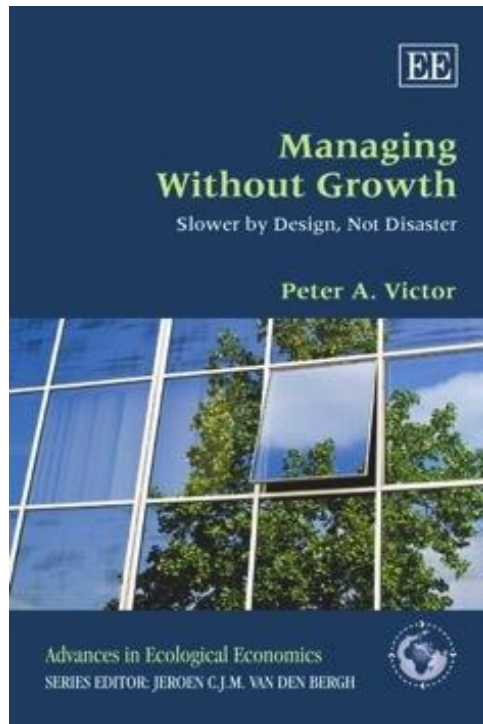
“You can get this burst of wealth that we have created from this rapacious behavior. But it has to collapse, unless adults stand up and say, ‘This is a Ponzi scheme. We have not generated real wealth, and we are destroying a livable climate ...’

Real wealth is something you can pass on in a way that others can enjoy.”





# Peter Victor: Managing Without Growth



Why rich countries should turn away from economic growth as the primary policy objective and pursue more specific objectives that enhance well-being

1. Continued economic growth worldwide is unrealistic due to environmental and resource constraints.
2. Rising incomes increase happiness and well-being only up to a level that has since been surpassed in rich countries.
3. Economic growth has not brought full employment, eliminated poverty, or reduced the burden of the economy on the environment.

# Recovery or Reinvention?

"We can't solve problems by using the same kind of thinking we used when we created them." (Albert Einstein)

## DRM Syndrome

(Rob Watson, Greener Buildings News, Feb 09)

Disaster-Recovery Mentality

Back to the old normal and status quo

vs.

## ReWealth

(Storm Cunningham, *ReWealth*, 2008 )

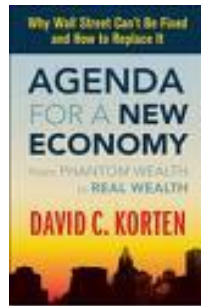
Revitalize, Renew, Reinvent

“Creative destruction” leap to the new normal

(Joseph Schumpeter, *Capitalism, Socialism and Democracy*, 1942)

# David Korten's 10-Point Recovery Plan

1. Local and national food independence
2. Local ownership of enterprises
3. Energy independence with renewables
4. Balanced and fair trade relations
5. Walkable, bikeable communities with efficient transit
6. Strong middle class society – rebalancing wealth distribution; access to health care, education, etc.
7. Make Wall-Street's casino unprofitable – transactions tax, responsible capital ratios, surcharge on short-term gains
8. Community banks – reverse mergers and acquisitions
9. Money created by the federal gov't, not bank-issued debt
10. Federal government control of Federal Reserve – stabilize money supply, discourage speculation, contain housing and stock market bubbles



# Michael Moore's 10-Point Recovery Plan

1. Prosecute Wall Streeters who contributed to the collapse
2. Make rich pay for their own bailout: \$300B from 10% surcharge tax for 5 years on incomes over \$500K; \$200B from 0.25% tax on every stock transaction; \$500B from corporate tax restored to 1950s levels
3. Bail out the 1.3M people losing their homes due to foreclosure, not the banks -- \$100K / homeowner
4. If you get a bailout, we own you
5. Tighten banking & investment regulations
6. If it's too big to fail, it's too big to exist
7. Max executive pay of 40 x average employee (vs. 400 x)
8. FDIC should protect up to \$250K savings, and pensions
9. Stop the panic and fear mongering
10. Create a national "People's Bank," funded with bailout \$



# Hazel Henderson: Reform the “Global Casino”

“The global financial system and the processes of economic and technological globalization over the last 25 years have not only **failed** but have brought **greater injustice, widened inequity, increased social disruption, and wreaked enormous ecological damage.**”



The disgraced Wall Streeters and other financial players in the **global casino** are still in denial that financial sectors, particularly in the USA and Britain, had **metastasized to some 25% of their GDPs** ... An efficient financial sector should comprise no more than 10% of a country's GDP.”

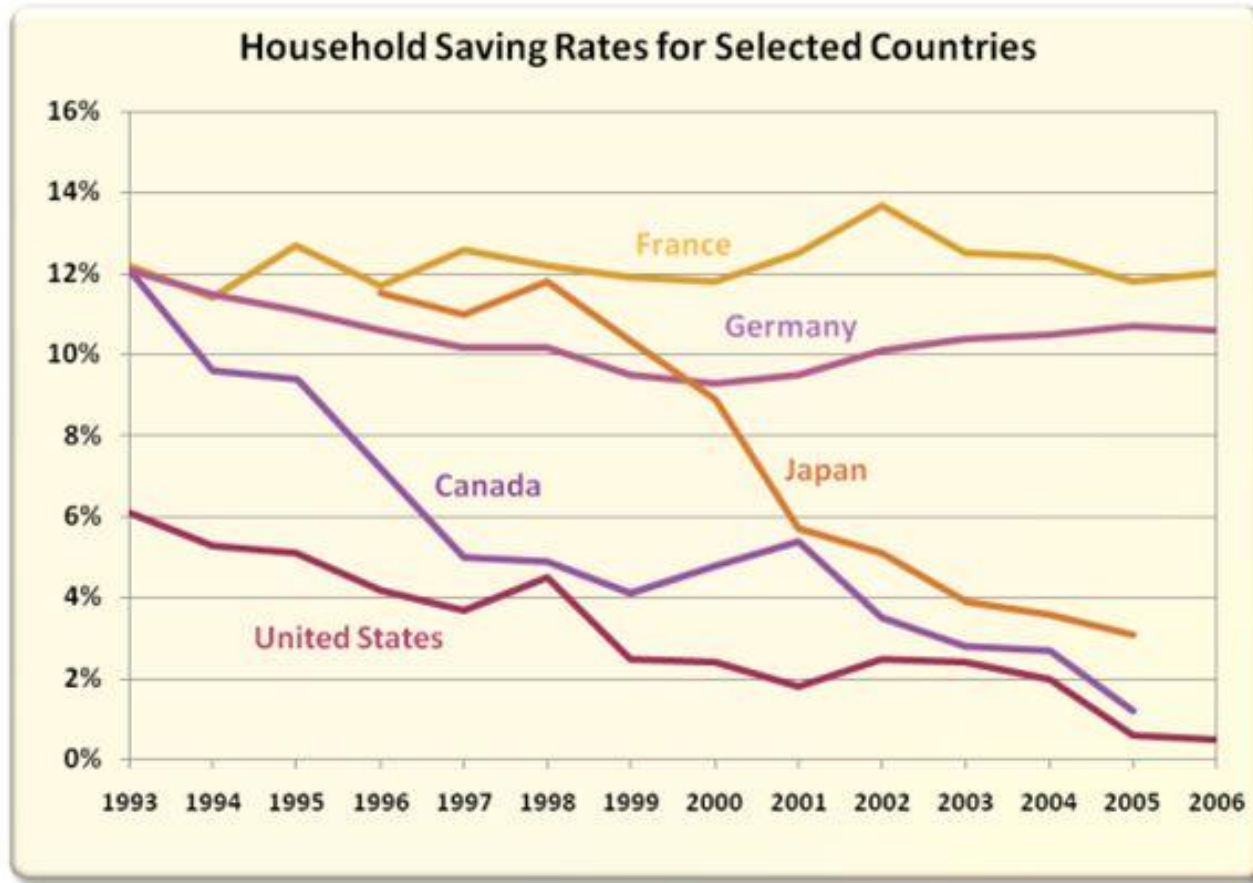
# Hazel Henderson's 7 Proposed Reforms

1. Implement the “**Tobin Tax:**” 1% tax on the \$3T of daily currency trades to discourage its 90% speculative activity and raise over \$300B annually to meet the UN’s Millennium Development Goals
2. Replace the **\$1T annual military expenditures** with a **UN Security Insurance Agency** and UN peace-keeping force
3. **Harmonize and reform debt-based monetary systems;** raise capital reserve requirements; and reduce leverage
4. **Criminalize tax avoidance** in tax havens
5. **Regulate more:** hedge funds, private equity funds, sovereign wealth funds, and the \$683T of credit and derivatives contracts like the \$60T of credit default swaps
6. Shareholders vote on **executive compensation** plans
7. Investors fund **rating agencies**, not issuers of securities



# Consumer “Affluenza”

False prosperity built on easy credit



Source: Organization for Economic Cooperation and Development (2007)  
OECD Economic Outlook: December No. 82 – Volume 2007 Issue 2



Buy  
Borrow  
Want  
See

“The Great Consumer Crash of 2009,” by James Quinn, Aug 08, on SeekingAlpha.com

# Communicating the Business Case for Sustainability

PRESSURE FROM THE EU MARKET,  
STATES / PROVINCES, AND CITIES

Slide Subset 5



# Threat to European Market Access

## Pollution & health regulations

Restriction on Hazardous Substances (RoHS)

Waste from Electrical and Electronic Equipment (WEEE)

End of Life Vehicles Directive (ELVD)

Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH)

Energy-using Products (EuP)

## Climate Change Plan

Reduce CO2 20% below 1990 level by 2020

Big retailers taking action



# EU Pollution Regulations

## **Restriction on Hazardous Substances (RoHS)**

Lead, cadmium, mercury, hexavalent chromium, flame retardants; in force July 2006

## **Waste from Electrical and Electronic Equipment (WEEE)**

Take-back & disassembly of products & components;  
in force January 2007;

## **End of Life Vehicles Directive (ELVD)**

Car manufacturers pay for scrapping all models and makes  
80% recycled now, 85% by 2015

## **Registration, Evaluation, Authorization and Restriction of Chemicals (REACH)**

burden of proof on manufacturers to prove chemicals are  
safe; in force April 2007

# UK Retailers Going Green



- **Tesco:** UK's biggest retailer; **10-point Community Plan** (May 06); £100M 'revolution in green consumption' fund; **carbon footprint labeling**; cut 50% of energy / sq ft by 2010; reduce CO2 / case by 30% by 2009

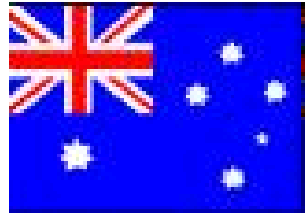


- **Marks & Spencer:** UK's 3rd biggest retailer; £200m over 5 yrs on **100-point 'eco-plan'** to cut waste, sell fair trade, energy from composting unsold food, biodegradable packaging, **labeling food sources**; carbon neutral stores; reduced energy / sq ft by 30%



- **ASDA:** **Cut packaging by 10% by 2007**; no packaging on fresh produce; 0 waste to landfill by 2010; 1,000 organic lines (June 07 vs. 325 in 2005)

# Australia



PM John Howard joined President George Bush in not signing Kyoto Protocol

PM Kevin Rudd beats John Howard on strong climate change platform (Nov 07)





Australia ratifies Kyoto Protocol (Dec 07)  
Commit to 108% of 1990 level by 2008-2012  
Target of 60% below 2000 levels by 2050.

New plan (Dec 08)

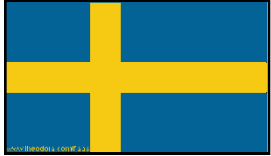
5% below 2000 GHG level by 2020

Could be 15% if international agreement

# Global GHG Reduction Targets

		<i>By 2020</i>
What climate scientists say is required		25-40% below 1990 level
European Union		20% below 1990 level
USA / Obama		1990 level
Australia		5-15% below 2000 level
Canada		20% below 2006 level (6% below 1990 level)

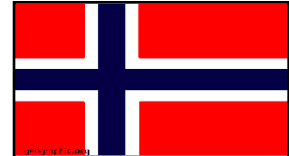
# EU Country Plans



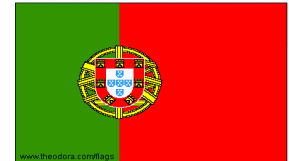
- **Sweden:** 49% renewable energy by 2020, without nuclear



- **Norway:** Carbon-neutral by 2030 (Jan 08)
- **Spain:** 20% renewable energy by 2010



- **Portugal:** 45% renewable energy by 2010



- **UK:** 26-30% less GHGs by 2020, 80% less by 2050 (up from 60%, Nov 08); 15 % renewables by 2020

- **Germany:** Reduce GHGs by 40% by 2020; Increase share of renewable power to 30%



# India



Ratified Kyoto Protocol in Aug 02

As a developing country. it is not required to set the specific reductions targets required for developed countries

World's 5th biggest GHG emitter in 2003

1,008 M tonnes vs. US (5,762), China (3,473) and Russia (1,540)

Produces 4% of global CO<sub>2</sub> emissions

Population of 1.1B vs. 1.3B in China (2008)

Emissions growing by 2 – 3% / year

Main contributor is energy sector, forecasted to grow significantly by 2012, to link up 500M people living without electricity.

Emitted 1 tonne / person / year in 1998

25% of global average of 4 tonnes, vs. US's 20 tonnes

# China



1.3B people in 2007

Not in the Kyoto Protocol

China emitted 25% of world's CO<sub>2</sub> in 2007

Surpassed USA as most GHG polluting nation in 2007

Built about 2 coal-fired power plants a week in 2007

Contributed 2/3 of the 3.1% increase in global CO<sub>2</sub> emissions

Targeting 8% GDP growth in 2008,  
after years of double digit growth

Current five-year plan:

Cut energy consumption 20% per unit of GDP by 2010,  
while reducing CO<sub>2</sub> and other emissions by 10%

Falling short; poor execution at the local level

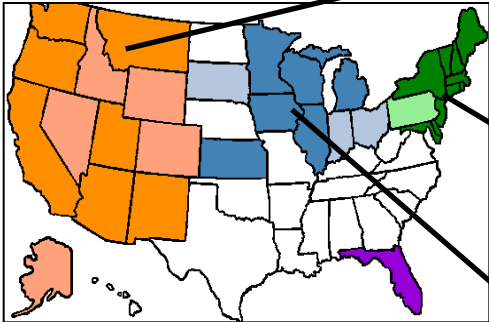


# Threat of U.S. Market Actions



## U.S. Mayors' Climate Protection Agreement

Kyoto at city level for 911 U.S. cities (as of Feb. 09)  
7% below 1990 GHG levels by 2008-2012



## Western Climate Initiative (WCI)

7 West-coast U.S. states + BC, MB, QC, ON

## Regional Greenhouse Gas Initiative (RGGI)

10 East-coast U.S. States

## Midwestern GHG Accord (MGA)

9 Midwest States + MB



## US Climate Action Partnership (USCAP)



31 corps and NGOs; want cap-and-trade,  
15% GHG cut in 15 years; 60-80% GHG cut by 2050

# Al Gore's "Climate Change Moonshot"



"America must commit to producing 100% of our **electricity** from renewable energy and other clean sources within 10 years."

"This goal is achievable, affordable, and transformative."

"The survival of the U.S.A. as we know it is at risk."

"The future of human civilization is at stake."

"We are committed to changing not only light bulbs, but laws."

Calls for **Unified National Grid, plug-in electric cars, efficiency, conservation, carbon taxes and caps, political leadership**



<http://www.wecansolveit.org/>

# Candidate Obama's "Apollo Project"

## Green "New Deal"

"We will invest **\$150B** over the next decade in renewable energy, creating **5M new "green collar jobs"** that pay well, can't be outsourced, and help end our dependence on foreign oil."

- Expand use of renewable energy -- supply 10% of America's electricity within four years
- Insulate a million homes a year
- 1M rechargeable "plug-in hybrid cars" by 2015
- Increase U.S. car fuel economy standards by 4% per year
- Boost sales of green cars with \$7,000 tax credit
- Convert the White House fleet to plug-in hybrids within a year of taking office.



# CAP's "Green Recovery" Report

Center for American Progress (CAP) report (Sept. 08)

## **"Green Recovery: A new Program to Create Good Jobs and Start Building Low-Carbon Economy"**

CAPS is led by John Podesta,  
former Chief of Staff to President Clinton and  
head of President-elect Obama's transition team

- **6 low-carbon economy strategies**: Building retrofits; Mass transit & freight rail; "Smart" electric grid; Wind power; Solar power; Advanced biofuels
- **\$100B over two years → 2.5 M good jobs**
- Funded with \$50B of tax credits, \$46B in government spending on retrofits, mass transit, freight rail, smart grid, and renewable energy; \$4B in loan guarantees
- **Repay with cap-and-trade auction revenue**

# ICAP

## International Carbon Action Partnership (ICAP)

An international forum in which governments adopting mandatory GHG emissions cap-and-trade systems will share experiences and best practices on the design of emissions trading schemes

- European countries
- U.S. states: Western Climate Initiative (WCI) and Regional Greenhouse Gas Initiative (RGGI)
- Canadian provinces,
- New Zealand
- Norway



# Climate Neutral Network (CN Net)



Set up by the UN Environment Programme and UN Environmental Management Group (Mar 08)

An Internet-based project aimed at exchanging information on reducing GHG emissions

Founded by 4 countries, 4 cities and 5 corporations

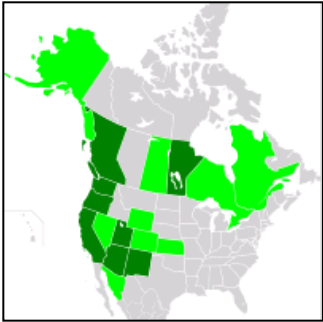
**4 Countries:** Costa Rica, Iceland, New Zealand, and Norway

**4 Cities:** Arendal (Norway), Rizhao (China), Växjö (Sweden), and Vancouver (Canada)

**5 Companies:** Co-operative Financial Services (England), Interface Inc. (United States), Natura (Brazil), Nedbank (South Africa) and Senoko Power (Singapore).

# Western Climate Initiative (WCI)

Reduce GHGs to 15% below 2005 levels by 2020  
Foundation for a common cap-and-trade system



Members: 7 western states + 4 provinces

CA, AZ, MT, NM, OR, UT, WA + BC, MB, QC, ON

Observers: 6 states + 1 province

AK, CO, IDA, KS. NV, WY + SK

Promote renewable energy and energy efficiency  
Target companies in carbon-intensive industries that  
emit > 25,000T of CO<sub>2</sub> annually, such as refiners,  
cement companies and utilities by 2012, and  
transportation, heating, and other fuels by 2015.



Advocate for national climate policies

# California

First state to impose limits on global warming gases



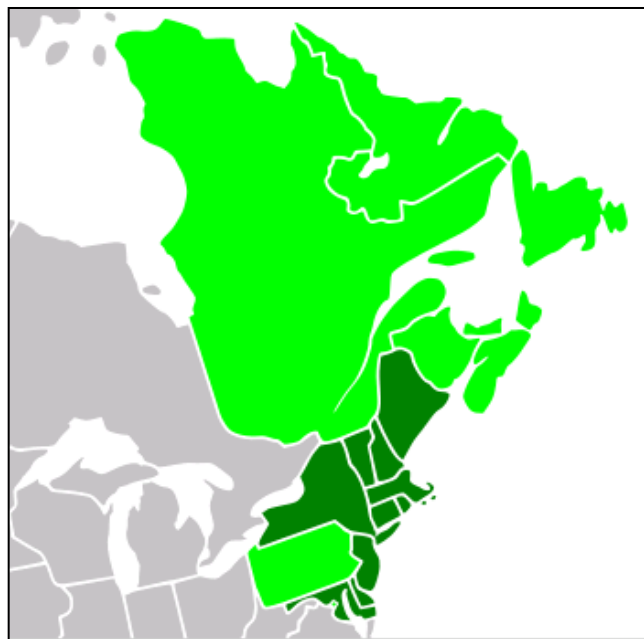
Target of 25% cut in CO<sub>2</sub> emissions by 2020

Goal of 20% of electricity from wind and solar by 2010 (2006)

New target of 33% of California's electricity from renewable sources by 2020 (Nov 08)



# Regional Greenhouse Gas Initiative (RGGI)



## 10 NE and mid-Atlantic States:

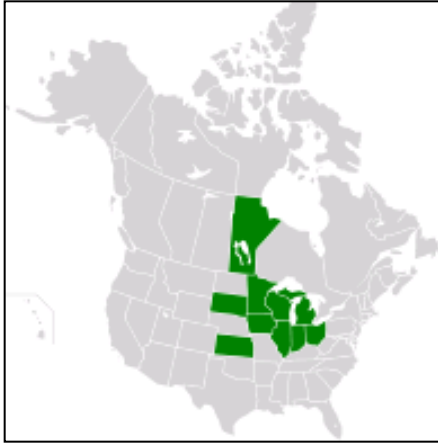
Maryland, Delaware, New Jersey,  
New York, Connecticut, Rhode  
Island, Massachusetts, New  
Hampshire, Vermont and Maine

## Observers

Pennsylvania, District of Columbia,  
eastern Canadian provinces

- Start with a [cap-and-trade program](#) for fossil fuel-fired power plants > 25 Mw (~ 225 facilities); cap of 188MT/yr
- First carbon auction, 9/08; Starts 1/09

# Midwestern Greenhouse Gas Reduction Accord



## 6 Midwest States + 1 Province

Illinois, Iowa, Kansas, Minnesota, Michigan,  
Wisconsin, and Manitoba

## Observers

Indiana, Ohio, and South Dakota

Agreed to set up a regional **cap-and-trade**  
system for trading emission credits; trading  
begins in 2010.

# Florida

Sweeping eco-executive orders (July 07)

Adopt California's strict vehicle-emissions law

40% reduction in statewide GHG emissions by 2025

Prioritize fuel efficiency for State vehicles

State utilities to use 20% renewable power

Create a Florida Governor's Action Team on Energy and  
Climate Change



Republican Gov. Charlie Crist


# Canada

Reduce GHG emissions by 20% from 2006 levels by 2020;  
60 to 70% reductions by 2050

- Establish a market price for carbon
- Force industry to reduce its GHG emissions: “tough, tougher, toughest” on facilities built before 2004, 2004-2011, 2012+
- Set up a carbon emissions trading market, including a carbon offset system
- Require oil sands starting operations in 2012 to implement carbon capture and storage
- Ban construction of new dirty coal plants starting in 2012



# Canadian Political Parties' Positions

	Conservatives	Liberals	NDP	Greens
<i>Target reduction of GHGs</i>	20% below 2006 level by 2020	20% below 1990 level by 2020; 60-80% by 2050	25% below 1990 level by 2020; 80% by 2050	6% below 1990 level by 2012; 30% by 2020; 80% by 2050
<i>How</i>	Intensity-based targets	Carbon tax of \$40/T by 2012; cap-and-trade system for big emitters	Polluter pays; Cap-and-trade system for big emitters	Carbon tax of \$50/T now; \$100/T by 2020; cap-and-trade system for big emitters
<i>Other</i>	\$2B clean energy fund; Cut excise tax on diesel fuel from \$0.04/L to \$0.02/L	National retrofit program; \$400M/4 yrs for tax credits to better co's; \$250M for clean tech	\$1B/yr on public transit, incentives & retrofits; Halt tar sands until emissions are capped	National retrofit program; End subsidies to / phase out coal, oil, gas, nuclear;

# Ontario and New Brunswick



## Ontario

Looking at RGGI and the Western Regional Climate Change  
6% below 1990 levels by 2014, 15% by 2020, 80% by 2050

Shut 4 remaining coal-fired power plants, rapid transit, more  
fuel efficient vehicles, R&D in new technologies. Standard

Offer Program (June 07);

\$650 million incentive fund for greener cars and automotive  
parts (June 07)



## New Brunswick

Looking at RGGI

1990 levels by 2012, 10% below by 2020

# Ontario's Bill 150

## Green Energy and Green Economy Act

Ontario has 29.7 gigawatts of energy generating capacity  
25% is from renewable energy in 2008



Want 50% from renewable energy  
Other 50% will be from nuclear  
+ Create 50,000 jobs in three years



Want to create a green economy by ...

1. Doubling renewable energy
2. Sweeping energy efficiency measures
3. Reduce greenhouse gas emissions.





# Ontario Green Energy and Green Economy Act, 2009

Feed-In Tariff (FIT) regime for green / renewable energy

“Right to connect” to the electricity grid

Smart grid commitment

Low- or no-interest loans for green energy projects

Renewable Energy Facilitator for "one-window" assistance

Review every 5 years of building efficiency

LEED Silver for new buildings

Requires energy conservation plans for all public sector

Energy Star appliances only

Homes energy audit prior to sale



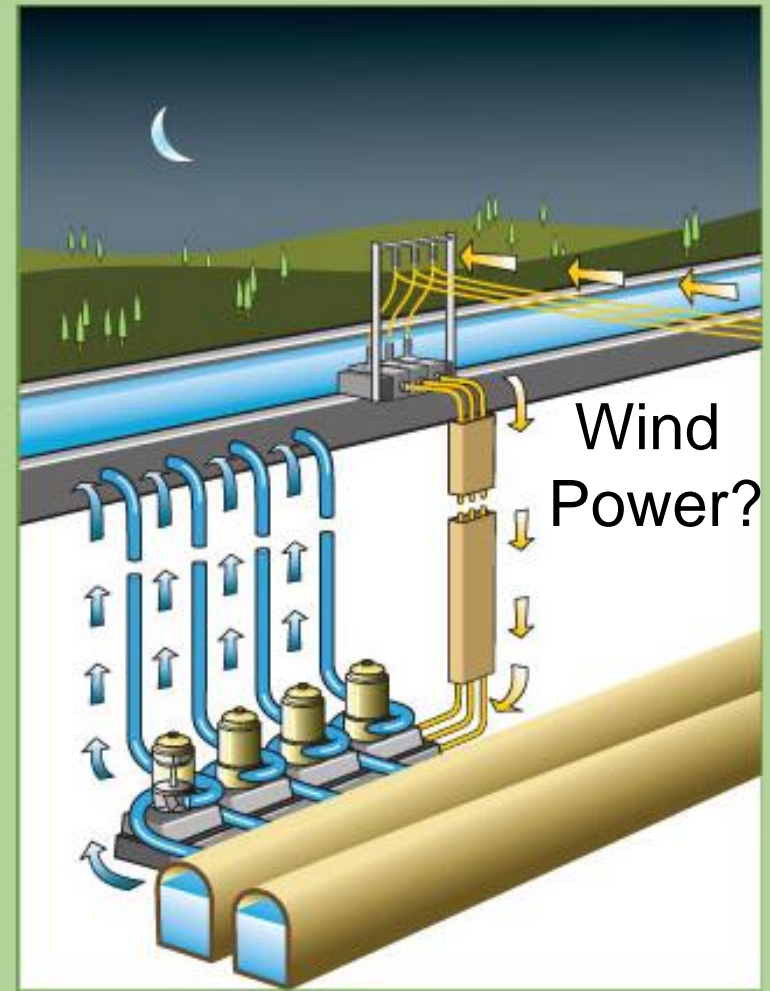
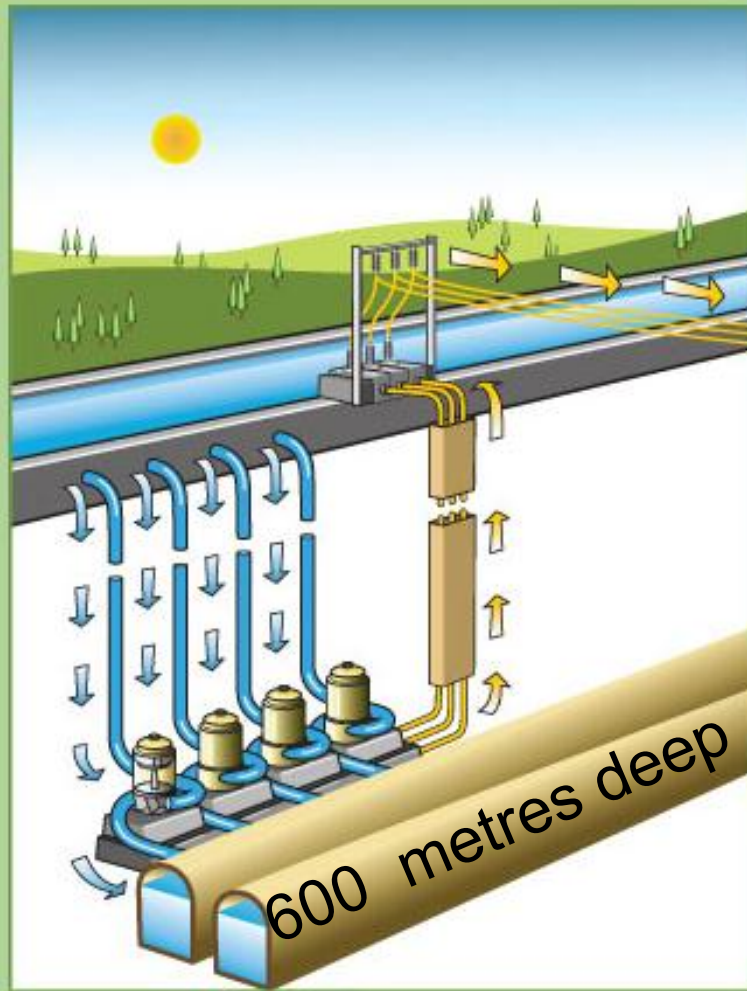
# Ontario Proposed Feed-In Tariffs

Technology	Proposed size tranches	Proposed ¢/kWh
<b>Biomass*</b>		
	Any size	12.2
<b>Biogas*</b>		
	≤ 5 MW	14.7
	> 5 MW	10.4
<b>Waterpower*</b>		
	≤ 50 MW	12.9
Community Based	≤ 2 MW	13.4
<b>Landfill gas*</b>		
	≤ 5MW	11.1
	> 5 MW	10.3
<b>Solar PV</b>		
Rooftop	≤10 kW	80.2
	10 – 100 kW	71.3
	100 – 500 kW	63.5
	> 500 kW	53.9
Ground Mounted	≤ 10 MW	44.3
<b>Wind</b>		
Onshore	Any size	13.5
Offshore	Any size	19.0
Community Based	≤ 10 MW	14.4

# Large-Scale Energy Storage

Day: High energy demand

Night: Low energy demand



4 x 250 MW turbines; 3.8B litres of water in underground caverns

# Quebec and British Columbia



## Quebec

1st to set GHG emissions target in 2003;  
1.5% below 1990 levels by 2012;

Carbon tax as of Oct 07 of 0.8¢/litre on gasoline, etc. → Green Fund for wind energy, hydropower, public transit and energy efficiency



## British Columbia

1990 levels by 2012, 10% below 1990 levels by 2020;

B.C. government operations to carbon neutral by 2010

All new electricity projects to have 0 net GHG emissions

Existing thermal generation power plants: 0 net GHGs by 2016

Expand hydropower, close coal-fired generators,  
public transit, energy efficiency, modernize electricity grid

May join western States cap-and-trade system

# British Columbia



- \$1 billion for 2008-2012 climate change initiatives (Feb 08)
- **Carbon tax** by July 08; Start at \$0.0241 per litre of gasoline; \$0.0724 per litre by 2012; revenue neutral (Feb 08)
- 0 net GHGs from new electricity projects, existing thermal power plants by 2016
- Continued 90% clean electricity generation
- **BC Climate Action Charter:** BC and 12 municipalities commit to being carbon neutral by 2012 (Sept. 07)
- Energy self-sufficiency by 2016

# Alberta

Companies emitting over 100,000 tonnes of GHGs / year to  
reduce emissions intensity by 12% annually

Aims to cut GHGs by 14% from 2005 levels by 2050  
(Jan 08)

70% from unproven carbon capture and storage (CCS)  
12% from conservation / efficiencies  
18% from alternative energy

\$4B into two funds: \$2B for carbon capture and storage  
programs and \$2B to boost use of public transit (July 08)



# Alberta Oil Sands Project

**Energy:** Uses enough natural gas / day to heat 3M homes

**GHGs:** 3 X more GHG from producing a barrel of oil than a barrel of conventional oil; fastest growing source of GHGs in Canada; approvals to double the size of existing operations; by 2020 the oil sands will release 2 X GHGs produced currently by all the cars and trucks in Canada.

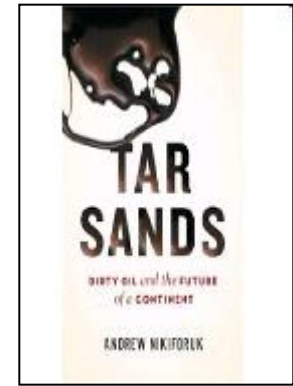


**Water:** Licensed to use 2 X Calgary's annual fresh water; 90% ends up in 50 Sq Kms of toxic tailing ponds held back by one of the world's largest dams, visible from space



# Alberta Oil Sands Project is Big!

- Investment in the oil sands is \$200 B
  - World's largest energy project
  - World's largest construction project
  - World's largest capital project
  - Canada now produces more oil than Texas or Kuwait
  - Since 2001, Canada has surpassed Saudi Arabia as the largest single exporter of oil to the United States
- “Canadian crude is 1/5 of all US oil imports. If development continues unabated, Canada will soon provide the U.S. 1/3 of its oil, while half of Canada's own citizens remain dependent on insecure supplies from the Middle East”



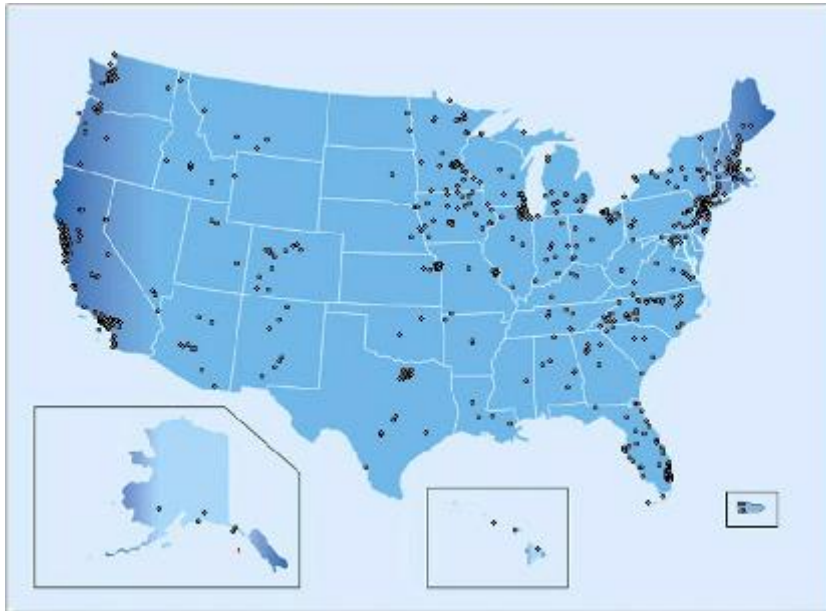
# US Cities' Climate Protection Agreement

Started Mar 05 with 10 cities led by Seattle's mayor Nichols  
884 mayors from 50 states; represent 78M Americans (Sept 08)

Reduce GHGs 7% below 1990 levels by 2012

Urge state & federal governments to do same

Urge Congress to establish a national emission trading system



Many are C40 members





# C40 Cities' Climate Leadership



Cities consume 75% of the world's energy and produce 80% of its GHGs

50-70% of cities' GHGs are from buildings

Large cities to act, leverage purchasing power, and reduce climate emissions

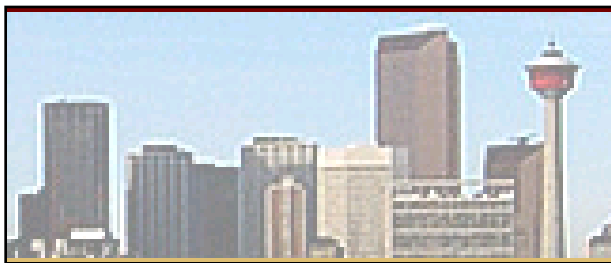


- Launched in London with 18 cities in Oct 05; now called **C40**; Partnership with the Clinton Climate Initiative (Aug 06)



- Clinton Climate Initiative's global **Energy Efficiency Building Retrofit Program** brings \$5B from 5 large banks to 16 largest cities to reduce energy consumption in existing buildings (May 07)
- **Urge G8 to stabilize GHGs** (May 07)

# Toronto



GHGs 6% below 1990  
levels by 2012 (Kyoto),  
30% by 2020,  
and 80% by 2050



Reduce smog-causing pollutants by 20% by 2012  
Energy efficient retrofit of ½ of single family homes and small  
businesses by 2020  
Mandatory green building standards for new by 2012  
LED technology in street lighting by 2020  
Deep lake water cooling for 90% of downtown space by 2020  
25% renewable energy in Toronto by 2020

# New York City



Reduce GHGs by 30% by 2017 (July 08)



**Congestion charge** of \$8/car and \$21/truck to travel below 86th Street during peak work hours – needs state approval  
70-80% of GHGs are from buildings, so will **revamp building codes and do retrofits**

**Will spend \$2.3B on PlaNYC**  
**Set aside 10% of NYC's annual energy bills to fund energy-saving upgrades of city-owned properties**

Expand subway, bus and ferry service

# Communicating the Business Case for Sustainability

PRESSURE FROM CORPORATIONS,  
UNIVERSITIES, AND OTHER RISKS

Slide Subset 6

# Climate Counts Scorecard

Scores 56 major corporations on  
**commitment to reversing climate change** –  
measuring & reducing GHGs,  
disclosure, legislation support

Evolved out of 2006 movie that showed how individual consumers  
can collectively change companies, markets, and history;  
Pocket-sized shopping guide or cell phone texting

*Best: Nike, Stonyfield Farm, Canon, IBM, GE, Toshiba,  
P&G, Sony, H-P, Motorola*

*Worst: Burger King, Darden (owner of Red Lobster, Olive  
Garden and other chains), Wendy's, Yum! Brands (KFC,  
Taco Bell, Pizza Hut and many more)*



May 2008 ranking

# Home Depot: “Eco Options” Products



#2 retailer in U.S.

World's largest buyer of construction material  
Influences thousands of suppliers, home  
builders, and consumers

Pressured by protests against selling wood  
from endangered forests in Chile and Indonesia

- Largest **green labeling program** in U.S.  
retailing; promotes energy conservation  
(Energy Star) and sustainable forestry (FSC)
- **2,500 products**; 90% already on the shelves  
(Apr 07) → **6,000 products by 2009**
- Preferential treatment: prominent shelf space,  
aggressive marketing



# Nike's "Nike Considered Design"



Considered  
Pegasus

More efficient design patterns use **less material**, easier to **recycle**, **adhesives** made from water instead of toxic chemicals, and sustainable materials like **cork and organic cotton**



Considered  
Air Jordan XX3

e.g **Air Jordan XX3** (unveiled Jan 08)

Made from recycled plastic and scrap materials with no toxic adhesives (more stitching)

## Targets

All **footwear** by 2011, all **apparel** by 2015, and all **equipment and backpacks** by 2020



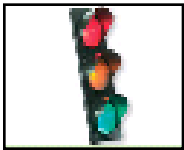
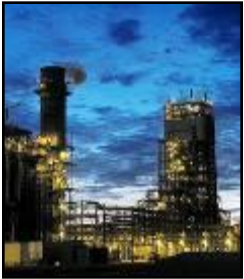
This will reduce waste in Nike's supply chain by 17% and increase use of environmentally preferred materials by 20%

# GE: “Ecomagination”



#6 company in Fortune 500 - \$168B in 2007;  
May 05 Announcements by CEO Jeffery Immelt

- **Revenue opportunity:** Sell **\$25B** of 60 “ecomagination” products per year by 2010, up from \$10 billion in sales in 2004; \$17B in 2007
- **1-30-30 GHG reduction from 2004 levels:** 1% absolute GHG reduction by 2012; 30% reduction of GHG intensity by 2008; 30% energy efficiency by 2012
- **Water efficiency:** 20% by 2012 vs. 2006 (May 08)
- **R&D:** 2x research investment in clean tech, from \$700M/yr in 2004 to **\$1.5B/yr in 2010; \$1.4B in 2008**





# Google.org: Clean Energy 2030

Google.org is the philanthropic arm of Google



2030 vision for the U.S.A



- 88% reduction in fossil fuel-based electricity generation  
→ wind, solar, and geothermal power
- 33% reduction in energy demand through stringent energy-efficiency measures.
- 90% of new vehicle sales will be plug-in hybrids
- 48% reduction in U.S. CO2 emissions
- 48% Cost \$4.4T; recoup \$5.4T in savings.
- Over 900,000 new jobs in wind & solar energy sectors

# Wal-Mart Environmental Goals

#1 company in 2007 Fortune 500

World's largest corporation, by revenue

\$378B revenue (up 8% from 2006); \$12.7B in profits

Oct 05 announcements by CEO Lee Scott; post-Katrina

## Environmental Goals

- To be supplied 100 % by renewable energy
- To create zero waste
- To sell products that sustain our resources and environment

“Save Money. Live better” (vs. “Always low prices”)

**WAL★MART**



# Wal-Mart: “Sustainability 360”

1. **7,000 stores:** Biggest US consumer of electricity; reduce GHGs by 20% by 2012; invest \$500M annually in efficient energy; 30% less energy; then **100% renewable energy**
2. **127M shoppers/week:** Sell 100 million CFLs by 2008
3. **1.9M employees:** Largest employer in the world
4. **Waste:** Reduce waste by 25% in 3 years, then **0**
5. **7,200 trucks:** Increase fuel efficiency by 25% in 3 years; double it in 10 years; save \$300M/yr
6. **Sustainable Products:** Fish, milk, cotton, 100M CFLs

# Wal-Mart Supply Chain Impact

1. **63,371 suppliers:** Reduce **packaging** by 5% by 2013; \$3.4M savings in 5 years
  2. **Sustainable Products:** Fish, milk, cotton, 100M CFLs, concentrated liquid laundry detergent
  3. **Scorecard for electronics suppliers:** energy use, durability, ease of recycling
- Goal to remove non-renewable energy from all its products
  - Partnership with the Carbon Disclosure Project to measure and improve energy use and emissions of the entire supply chain of **seven popular product categories:** beer, DVDs, milk, soap, soda, toothpaste, and vacuum cleaners.

**WAL★MART**



# Wal-Mart China Summit

Wal-Mart executives meeting with 1,000 leading suppliers, Chinese officials, and NGOs in Beijing (Oct 08)

## **Aggressive goals and expectations to build a more environmentally and socially responsible supply chain**

- **Certified** environmental & social regulatory **compliance** – Chinese suppliers by Jan 09, all suppliers by 2011
- Improve **energy efficiency** and use **fewer natural resources** – 20% less by 2012 in the top 200 Chinese supplier factories
- Higher standards of **product safety and quality** – Zero returns on defective merchandise by 2012
- **Greater transparency and ownership** -- By 2009, suppliers' suppliers must be named; by 2012, suppliers must source 95% from highest sustainability-rated factories

**WAL★MART**



# Greening the Supply Chain

- **Supply Chain Leadership Coalition (SCLC)** (October 2007)  
17 multinationals including Tesco, Unilever, P&G, L'Oreal, PepsiCo, H-P, Nestle, Cadbury Schweppes, Imperial Tobacco, and Dell will press suppliers to release data about carbon emissions and climate-change-mitigation strategies; created by the Carbon Disclosure Project (CDP)
- **Wal-Mart** (October 2007)  
Partners with the Carbon Disclosure Project to measure and improve scorecard of energy use and emissions of the entire supply chain of seven popular product categories

So What?

Big companies are asking suppliers not just to be greener, but to disclose climate strategies, programs, & performance

# Purchasing Power

TerraChoice 2008 survey of \$78B of purchasing power in Canada and the U.S.

68% of North American organizations increased their green purchasing in the past 12 months

91% of purchasers believe they will become more active green purchasers over the next two years

Purchaser-supplier collaborations are turning out to be a gold mine of product and service innovation, improved social and environmental conditions, and long-term economic benefits for both parties.

# Supply Chain Carbon Council

Launched by the [European Supply Chain Institute](#)

Members include

[KFW Foderbank](#), [IETA](#), [Carbon Disclosure Project](#), [Vizor](#),  
[Green 2020](#), [IBM](#), [JP Morgan](#)  
[EU Emissions Trading Scheme](#)

A multiyear research and recommendation program to develop and promote strategies for effective carbon management in the supply chain

[Aims to reduce carbon emissions and costs](#)

Will address carbon management, carbon trading, accurately measuring emissions, incentives for suppliers to reduce emissions, and automating emission monitoring and verification.





# US Corporations Urging Action

## US Climate Action Partnership (USCAP) (Jan 07)



31 corps and NGOs; \$2T revenue

Want cap-and-trade, 15% GHG cut in 15 years,  
80% GHG cut from 2005 by 2050 (Jan 09)

## Business Roundtable (July 07)

160 CEOs from top U.S. companies: \$4.5T revenue

*More Diverse, More Domestic, More Efficient: A  
Vision for America's Energy Future* Report  
Advocates improving US energy intensity  
by 25% over next 20 years



# US Climate Action Partnership (USCAP)



Want **cap-and-trade** system  
**15% GHG cut by 2022** (Jan 07)  
**80% cut below 2005 by 2050** (Jan 09)



31 corporations and 6 NGOs  
Revenue of \$2T (July 07)



**Alcoa, AIG, Boston Scientific, BP America,  
Caterpillar, Chrysler, ConocoPhillips, John Deere,  
Dow, Duke Energy, Exelon, DuPont, Ford,  
FPL Group, GE, GM, J&J, Marsh, NRG Energy,  
PepsiCo, PG&E, PNM Resources, Shell, Siemens,  
Xerox  
+ NRDC, Nature Conservatory, Pew Center, WRI**



# Combat Climate Change (3C)

Coalition of 46 international companies, including General Electric, AIG, Citigroup, BP, Siemens, Hitachi, RAO UESR, Reuters, Duke Energy, China Oil & Offshore Company, Tata Power, Alcan, and Vattenfall

Say a low-carbon economy is well within reach,  
and the time to act is now

Pushing global governments to join together for immediate action to address climate change. Want a global goal to dictate the maximum amount world leaders will allow global temperatures to increase and setting emissions targets to meet this goal.

Aims to create a global emissions-trading market and set requirements for energy efficiency and resource-use.



Formed November 2007

# Global Leadership Network (GLN)



To help companies integrate best practices in labor and environmental areas within their core business practices and their supply chains



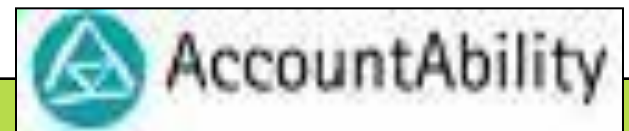
The [Center for Corporate Citizenship](#) at Boston College, [AccountAbility](#), and 25 leading global companies like [IBM](#), [3M](#), [GE](#), [GM](#), [FedEx](#), [ING](#), [Nokia](#), [Pfizer](#), [Home Depot](#), [Wells Fargo](#), [Dow](#)



[Big reach](#)



e.g. IBM buys \$36B / year in goods and services from 30,000 suppliers in approximately 80 countries.



# WWF Climate Savers Initiative

## Members

Google, Yahoo, Intel, Dell, H-P, IBM, Lenovo, Microsoft, Nokia, Sony, Nike + US EPA + 25 NGOs and Universities

## Energy savings campaign

Call for global GHG emissions to peak in the next 10-15 years and decline to half of 2000's levels by 2050.



# Procurement Clout?

50% have policies on greening their supply chain

98% believe green supply chains will grow

51% will pay a premium for eco-friendly products

29% are sourcing sustainable packaging materials

24% are sourcing raw materials used in manufacturing

Only 13% are sourcing 50% products and services sustainably

55% are sourcing less than 10% of green goods

49% say premium costs are an obstacle

66% do it in support of company's' sustainability strategies

49% are responding to customers' demands

# UN Global Compact

Launched in 2000

Purpose: to mainstream 10 universal principles re human rights, labor, environment ,and anti-corruption

World's largest voluntary corporate citizenship initiative  
4,619 participating companies plus 1,363 labour, civil society, and governments stakeholders from 120 countries  
701 new companies joined in 1H 2008 (July 08)

630 companies delisted in 1H 2008 as a part of its **Integrity Measures** requiring signatories to report on progress



# UN Global Compact's 10 Principles

1. Support and respect the protection of **human rights**
2. Do not be complicit in **human rights abuses**
3. Uphold the **freedom of association** and the effective recognition of the right to **collective bargaining**
4. Eliminate all forms of **forced and compulsory labor**
5. Abolish **child labor**
6. Eliminate **discrimination** re employment and occupation
7. Support a **precautionary approach** to environmental challenges
8. Promote greater **environmental responsibility**
9. Encourage the development and diffusion of **environmentally friendly technologies**
10. Work against **corruption**, including extortion and bribery





# The Business Leadership Platform

Issued at the UN Global Compact Leaders Summit (July 07)

153 global corporations, 30 from Global 500

Sponsored by the UN Global Compact,  
the United Nations Environment Programme (UNEP),  
and the World Business Council for Sustainable Development  
(WBCSD)

Calls for governments to speed up action on climate change  
and to quickly agree on workable and inclusive climate market  
mechanisms post 2012, when the Kyoto Protocol expires

Commit to energy efficiency, voluntary targets, annual  
reporting, work collaboratively within sectors  
and global supply chains to reduce climate risks

# Chief Sustainability Officers

GM, GE, DuPont, Owens Corning, Hilton Hotels, HSBC Bank,  
Dow Chemical, Home Depot

Helping companies **profit from going green / reducing GHGs**  
vs. environmental watchdogs

## Mixed titles

“Chief” / “Vice President”  
“Sustainability” / “Environmental”

## Powerful

Explore partnerships with vendors and customers  
to create green products  
Vote on product research and advertising campaigns

# CEO Water Mandate

Signed at 2007 Global Compact Leaders Summit in  
Geneva, Switzerland, July 2007

6 Global Companies

Coca-Cola, Levi Strauss, Läckeby Water Group, Nestlé,  
SABMiller, and Suez

## Call to Action

Set water-use targets

Assist suppliers with water-efficiency practices

Partner with governments, policy makers and community  
groups to address water shortages and sanitation



# Do CEOs Really Care?

## “A Change in the Climate” report

(Economist Intelligence Unit survey of 634 executives worldwide (152 CEOs) for UK Trade & Investment May 2007)

10% monitor overall carbon footprint

18% have carbon reduction plans in place

50% have no carbon-reduction plans for next 3 years

**Need:** Clear regulatory framework to reduce uncertainty

Market-based system to price carbon would be most effective

## “Shaping the New Rules of Competition” survey

(KPMG for UN Global Compact; survey 391 CEOs. July 2007)

72% of CEOs agreed that CR should be integrated into strategy and operations; only 50% do

59% say CR should be embedded into global supply chains; only 27% are

# Do Canadian CEOs Really Care?

## Canadian Council of Chief Executives (CCCE)

33-member group of leading CEO's

Climate change and sustainable development represent  
major economic opportunities

Call for aggressive global action to address climate change

1. Coherent national plan of action on climate change
2. Targets and investment to spur innovation
3. Price signals and market-based mechanisms such as emissions trading and environmental taxation
4. Canadian leadership globally

However, no specifics on a carbon taxes, emissions trading systems, of GHG reduction targets

# CEOs Worry About Change

1,100 CEOs, 40 countries, 32 industry sectors:

19% > 50,000 employees; 22% < 1,000

“22% “change gap”: 83% forecast significant change, but just 61% believe they are up to the job of managing it

75% say **Top 3 Drivers** of change are:

market factors, people skills, and technological factors

**Top 3 Actions** to close change gap:

Invest in global integration, partner collaboration, and CSR

Lack of talent is biggest barrier to global integration, ahead of regulatory and budgetary hurdles.

Increasing number of customers are making social judgments before taking buying decisions

# We May Need a Revolution

“The challenge is for developed nations to cut carbon emission levels by 60-80% from current levels by 2050 if global emissions are to be kept below 550 parts per million. Global emissions at that level would keep average permanent global temperature increase below 3 degrees by 2050, a level beyond which most scientists say climate change would be significantly worse.”

“I think it's beginning to dawn on people that we are talking about such a major change in society... I don't think we've seen that kind of a challenge in societal change happening peacefully. It's [only] happened in revolutions.”

(Bjorn Stigson, President of WBCSD, Sept 07)



# Unusual Threats Driving Sustainability

## **National Security** → Alternative energy

\$2B by 2011 from U.S. Gov for international clean energy technology fund to help fight climate change.

## **War for Talent** → Sustainability reputation

70% of NA grads seek companies with good CSR reputations

## **Revenue Pressure** → Carbon trading

\$118B global carbon market in 2008, up 84% from 2007  
(New Carbon Finance report, Jan 09)

## **Sarbanes Oxley** → Sustainability reporting

Global Reporting Initiative guidance on reporting risks  
64% of Global 250 do sustainability reports



# Sustainability Reporting in 2008

75% of the top 100 U.S. companies by revenue reported sustainability data in 2008:  
2 X the number in 2005

80% of Global Fortune 250 companies divulge CR information:  
64% did in 2005

64% of Global Fortune 250 companies describe how they will mitigate climate change business risks,  
but 41% of fail to disclose their carbon footprint.



# Colleges' & Universities' Leadership

## American College & University Presidents Climate Commitment

600 U.S. colleges and universities in 49 states (as of Oct 08)

Plan to eliminate campus GHG emissions

LEED Silver+ for new campus construction

Purchase only Energy Star-certified products

Offset GHGs from school-funded air travel

Encourage public transit use; purchase renewable energy

Support shareholder sustainability resolutions in endowment companies



## Net Impact

10,000 MBA students and professional members

Chapters in 100 universities in 80 cities on 6 continents



# College Sustainability Report Card

Ranks 300 colleges and universities in U.S. and Canada  
Started 9/08 by GreenReportCard.org

## Top 15 schools

Brown, Columbia, Dartmouth, Harvard, Penn, Stanford,  
Carleton, Dickinson, Middlebury, Oberlin, U of Colorado,  
U of New Hampshire, U of Vermont, U of Washington, and  
U of British Columbia

## Ranked in 9 categories

Climate and energy use, green building, food and recycling,  
transportation, administration, student involvement,  
endowment transparency, shareholder engagement, and  
investment priorities

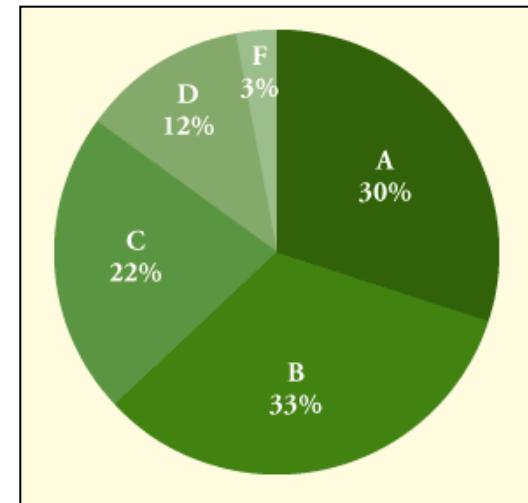


# College Sustainability Report Card

Food & Recycling is 1 of 9 categories

- 82% buy (some) food from **local** farms and/or producers
- 29% have a **community garden** or farm on campus
- 74% offer **fair trade** coffee and other food items
- 55% **compost** food waste; 46% compost landscape waste
- 32% have **biodegradable to-go containers**
- 68% offer daily **vegan options**

Average grade of B-



# ASSHE “STARS” Project

Sustainability, Tracking, Assessment and Rating System (STARS), developed by the Association for the Advancement of Sustainability in Higher Education (AASHE)

Pilot in on 90 campuses in 2008; full launch in 2009 (Feb 08)

1. Gauge college & university progress toward sustainability in all sectors, from governance and operations to academics and community engagement
2. Develop meaningful ways to benchmark progress
3. Develop and promote incentives for improvement
4. Share best practices and resources on sustainability
5. Build more diverse participation



# Beyond Grey Pinstripes 2007

Biennial survey and ranking of business schools  
on integration of social and environmental stewardship into  
business school curricula and research



## Criteria



Student Opportunity / Course Volume (25%)

Student Exposure / Course Time (25%)

Content / Business Value (25%)

Research / Articles (25%)

## Rankings

- |                       |                          |                            |
|-----------------------|--------------------------|----------------------------|
| 1. Stanford (USA)     | 2. ESADE (Spain)         | 3. York (Canada)           |
| 4. ITESM (Mexico)     | 5. Notre Dame (USA)      | 6. George Washington (USA) |
| 7. Michigan (USA)     | 8. North Carolina (USA)  | 9. Cornell (USA)           |
| 10. Wake Forest (USA) | 14. Western Ont (Canada) | 22. McGill (Canada)        |

# Beyond Grey Pinstripes 2007

63% of B-schools require students take a course on business and society issues, up from 34% in 2001

Increase of 20% since 2005 in elective courses dedicated to social and environmental content

Of 112 schools surveyed, 35 offered a special concentration or major on social and environmental issues inherent in mainstream, for-profit business.

Change is happening slowly. In 2007, only 5% of the faculty at schools surveyed published academic research on social or environmental topics.

# Green MBAs

- **Bainbridge Graduate Institute (BGI):** MBA in Sustainable Business (2002)
- **Presidio World College:** MBA program in Sustainable Management (2003)
- **New College:** Green MBA (2005)
- **Marlboro College Graduate Center:** MBA in Managing for Sustainability (2007)
- **Dominican University:** MBA in Sustainable Enterprise (2007)
- **Antioch University:** Green MBA (2007)
- **Green Mountain College:** 1st accredited distance education MBA program in sustainable business (2007)





# Principles for Responsible Management Education (PRME)

Promotes corporate responsibility (CR) and sustainability in business education

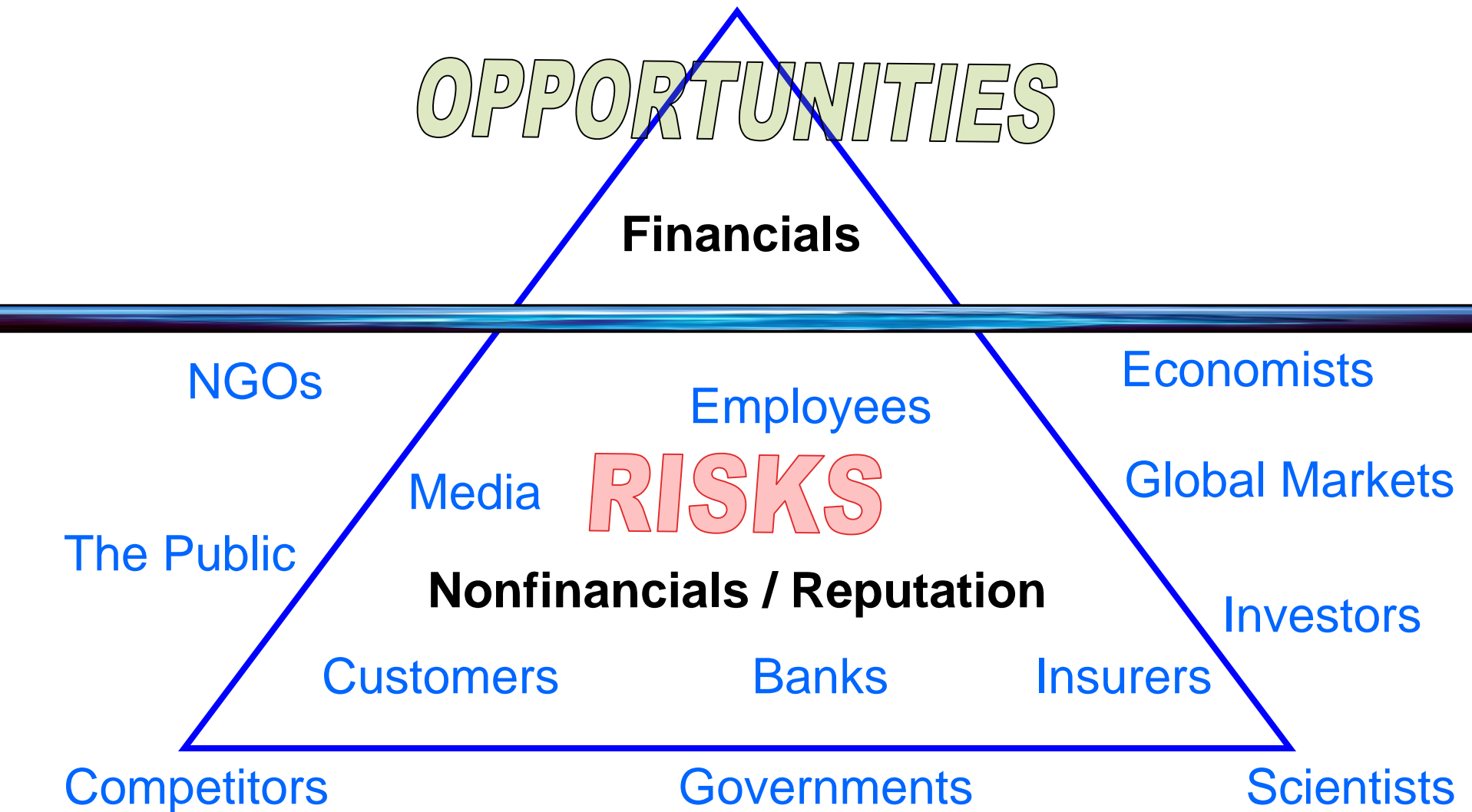
Launched by UN in June 2007

Endorsed by more than 100 business schools and universities from around the world (April 2008)

## 6 Principles of PRME

1. Develop future generators of sustainable value
2. Incorporate CR into academic activities and curricula
3. Create educational frameworks for CR leadership
4. Research how corporations create sustainable value
5. Partner with business on how to meet CR challenges
6. Dialogue with all groups on critical CR issues

# Two-Part Business Case



# Sustainability → Competitive Advantage

“Companies with the most robust climate change **risk management** architecture and ability to seize competitive **opportunities** on the upside have tended to **out-perform** their same-sector peers financially over the past three years”

“The “**Carbon Beta premium**” for leading companies appears to be **growing larger** over time, as regulatory regimes tighten around the world”

# Communicating the Business Case for Sustainability

## SME AND LARGE COMPANY BENEFITS

Slide Subset 7

# One More Goal ... or an Enabling Strategy?

Profit

Innovation

Share price

Speed to market

Growth

New markets

Revenue

Talent wars

Customer care

Productivity

Expense savings

Motivation

Competition

Brand image

Market share

Managing risks

Leadership

Compliance

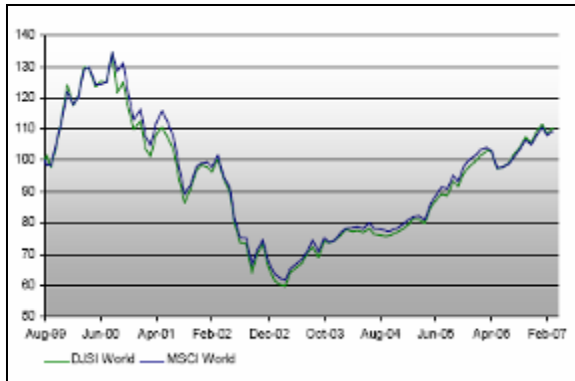
Governance

Supply security



# Sustainability Investing is Not a Sacrifice

Sustainability indices equal or outperform the market:  
DJSI, Jantzi, FTSE4GOOD



DJSI



Jantzi Social Index

## SRI Funds Growing

US SRI assets grew **18%** from 2005 to **\$2.7T** in 2007, vs. 3% for all investment assets; **1/9** of \$25.1T assets

## Freshfields Report

Dispels the myth that laws prevent fiduciaries from considering CSR issues; in fact, the law sometimes requires them to

# Typical SME Company Benefits

Revenue	\$4,000,000	
Profit	\$200,000	(5% of Revenue)
Workforce:	50	(43 + 7 Managers)
Avg. Employee Salary	\$25,000	
Avg. Manager Salary	\$55,000	

Potential profit increase: +66%

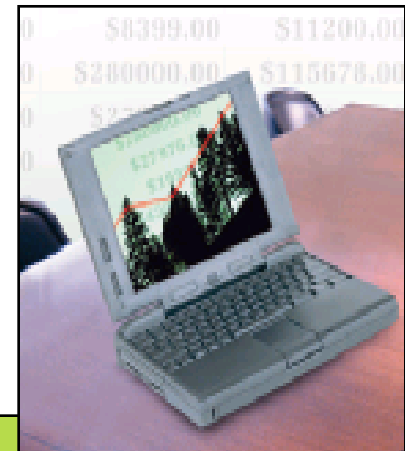
- + Energized employees + Improved corporate image
- + Competitive advantage + Positioned for the future



# Potential SME Profit Increase

Potential profit increase: +66%

- + Energized employees
- + Improved corporate image
- + Competitive advantage
- + Positioned for the future





# Lead It Like Any Culture Change

## 1. Walk-the-talk as senior leaders

Integrate into vision - mission – strategies

Business strategy vs. philanthropy

Earn credibility – Avoid “green-washing” hype

Visible support – speeches, questions, actions

## 2. Educate / engage the whole company

Solicit employee ideas - help

## 3. Align with measurement & reward systems



# 6 Benefit Areas

1. Reduced recruiting costs
2. Reduced attrition costs
3. Increased employee productivity
4. Eco-efficiencies: savings in energy, water, materials, waste handling
5. Increased revenue / market share
6. Lower insurance & borrowing costs

Usual  
focus

... yielding a profit increase of **+66%**

REPUTATION



# Potential Improvements

- |   |      |
|---|------|
| 1. Reduced recruiting costs   | -1%  |
| 2. Reduced attrition costs  | -2%  |
| 3. Increased employee productivity  | +6%  |
| 4. Eco-efficiencies: savings in energy,<br>water, materials, waste handling | -10% |
| 5. Increased revenue / market share   | +5%  |
| 6. Lower insurance & borrowing costs  | -5%  |

... yielding a profit increase of +66%

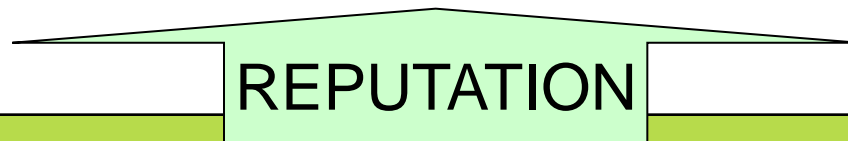
REPUTATION



# What if ... ?

- |   |                     |
|---|---------------------|
| 1. Reduced recruiting costs   | -1%                 |
| 2. Reduced attrition costs  | -2%                 |
| 3. Increased employee productivity  | +6%                 |
| 4. Eco-efficiencies: savings in energy,<br>water, materials, waste handling | <del>-10%</del> -5% |
| 5. Increased revenue / market share   | +5%                 |
| 6. Lower insurance & borrowing costs  | -5%                 |

... yielding a profit increase of ~~+66%~~  
+56%



# What if ... ?

- |   |                      |
|---|----------------------|
| 1. Reduced recruiting costs   | -1%                  |
| 2. Reduced attrition costs  | -2%                  |
| 3. Increased employee productivity  | +6%                  |
| 4. Eco-efficiencies: savings in energy,<br>water, materials, waste handling | -10%                 |
| 5. Increased revenue / market share   | <del>+5%</del> +2.5% |
| 6. Lower insurance & borrowing costs  | -5%                  |

... yielding a profit increase of ~~+66%~~  
+64%

REPUTATION



# What if ... ?

- |   |                    |
|---|--------------------|
| 1. Reduced recruiting costs   | -1%                |
| 2. Reduced attrition costs  | -2%                |
| 3. Increased employee productivity  | <del>+6%</del> +3% |
| 4. Eco-efficiencies: savings in energy,<br>water, materials, waste handling | -10%               |
| 5. Increased revenue / market share   | +5%                |
| 6. Lower insurance & borrowing costs  | -5%                |

... yielding a profit increase of ~~+66%~~  
+48%

REPUTATION



# What if ... ?

- |   |                      |
|---|----------------------|
| 1. Reduced recruiting costs   | -1%                  |
| 2. Reduced attrition costs  | -2%                  |
| 3. Increased employee productivity  | <del>+6%</del> +3%   |
| 4. Eco-efficiencies: savings in energy,<br>water, materials, waste handling | <del>-10%</del> -5%  |
| 5. Increased revenue / market share   | <del>+5%</del> +2.5% |
| 6. Lower insurance & borrowing costs  | -5%                  |

... yielding a profit increase of ~~+66%~~  
+35%

REPUTATION



# Typical Large Company Benefits

Revenue	\$44,000,000,000
Profit	\$3,000,000,000
Workforce	120,000
Avg. Employee Salary	\$60,000
Avg. Manager Salary	\$70,000

Potential profit increase: +38%

- + Energized employees + Improved corporate image
- + Competitive advantage + Positioned for the future





# Lead It Like Any Culture Change

## 1. Walk-the-talk as senior leaders

Integrate into vision - mission – strategies

Business strategy vs. philanthropy

Earn credibility – Avoid “green-washing” hype

Visible support – speeches, questions, actions

## 2. Educate / engage the whole company

Solicit employee ideas - help

## 3. Align with measurement & reward systems



# 7 Benefit Areas

1. Reduced recruiting costs
2. Reduced attrition costs
3. Increased employee productivity
4. Eco-efficiencies in manufacturing
5. Eco-efficiencies at commercial sites
6. Increased revenue - market share
7. Lower insurance & borrowing costs

Usual  
focus

... yielding a profit increase of **+38%**

REPUTATION



# Potential Improvements

- |   |      |
|---|------|
| 1. Reduced recruiting costs             | -1%  |
| 2. Reduced attrition costs              | -2%  |
| 3. Increased employee productivity      | +10% |
| 4. Eco-efficiencies in manufacturing    | -5%  |
| 5. Eco-efficiencies at commercial sites | -20% |
| 6. Increased revenue - market share     | +5%  |
| 7. Lower insurance & borrowing costs    | -5%  |

... yielding a profit increase of +38%

REPUTATION



# What if ... ?

- |   |                    |
|---|--------------------|
| 1. Reduced recruiting costs             | -1%                |
| 2. Reduced attrition costs              | -2%                |
| 3. Increased employee productivity      | +10%               |
| 4. Eco-efficiencies in manufacturing    | -5%                |
| 5. Eco-efficiencies at commercial sites | -20%               |
| 6. Increased revenue - market share     | <del>+5%</del> +2% |
| 7. Lower insurance & borrowing costs    | -5%                |

... yielding a profit increase of ~~+38%~~  
+35%

REPUTATION



# What if ... ?

- |   |                     |
|---|---------------------|
| 1. Reduced recruiting costs             | -1%                 |
| 2. Reduced attrition costs              | -2%                 |
| 3. Increased employee productivity      | <del>+10%</del> +4% |
| 4. Eco-efficiencies in manufacturing    | -5%                 |
| 5. Eco-efficiencies at commercial sites | -20%                |
| 6. Increased revenue - market share     | +5%                 |
| 7. Lower insurance & borrowing costs    | -5%                 |

... yielding a profit increase of ~~+38%~~  
+23%

REPUTATION



# What if ... ?

- |   |                     |
|---|---------------------|
| 1. Reduced recruiting costs             | -1%                 |
| 2. Reduced attrition costs              | -2%                 |
| 3. Increased employee productivity      | <del>+10%</del> +4% |
| 4. Eco-efficiencies in manufacturing    | -5%                 |
| 5. Eco-efficiencies at commercial sites | -20%                |
| 6. Increased revenue - market share     | <del>+5%</del> +2%  |
| 7. Lower insurance & borrowing costs    | -5%                 |

... yielding a profit increase of ~~+38%~~  
+20%

REPUTATION



# Communicating the Business Case for Sustainability

## DETAILED BENEFITS

Slide Subset 8

# Attracting Top Talent

## Benefit calculation

10% of workforce hired each year

20% attracted by company's sustainability image

5% reduction in recruiting costs for this 20%

Percent of recruiting costs saved: 1% (“place holder”)





# CSR Reputation Attracts Top Talent

40% of MBA grads rated CSR as a an “extremely” or “very” important company reputation measure (Hill & Knowlton Jan 08)

MBA grads will sacrifice an average of \$13,700 in annual salary to work for a socially responsible company (2003 Stanford U study)

79% of Americans say it is very important to work for employer with similar values (Fleishman-Hilliard 2006 survey)

68% of grads say CSR reputation trumps salary (GlobeScan 2003)



92% of students and entry-level hires seek an environmentally friendly company

(MonsterTRAK.com survey, Nov 07)

# Benefit of Retaining Top Talent



Cost of replacing a good employee  
= 2-3 x burdened cost of average employee

## Benefit calculation

10% attrition each year

Company only want to keep 10% of those leaving  
20% of those you want to keep are retained by the company's  
sustainability image

Percent of attrition costs saved: 2% ("place holder")

# One Foot Out the Door

“As many as **two-thirds** of today's workers are either **actively looking for new jobs** or **merely going through the motions** at their current jobs. While they still show up for work each day, in the ways that count, many have quit.”



## Employee priorities:

Keep learning

Achieve reasonable security

Be successful

Work and family to flourish

**Life as well as work to have meaning**

# CSR Reputation Retains Top Talent

83% of employees in G7 countries say company's positive CSR reputation increases their loyalty (GlobeScan 2006)

76% of employees are looking for a job at some level, ranging from casually surfing the Internet to actively interviewing  
(The Vargas Group, 2007)

Only 24% of employees report they feel “truly loyal” to their employers and plan to stay at least two years  
(The Vargas Group, 2007)

57% of employees say their company's CSR reputation is a factor in retaining them. (Towers Perrin-ISR global survey, 2007)

# CSR Volunteering Retains Top Talent

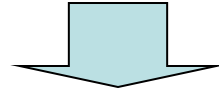
Manulife Financial donated \$25M to various organizations in 2007 and 18,000 employees gave 58,000 hours of their time to support causes. **Employees who volunteer were three times more likely to stay with the company."**

(Macleans magazine, "Giving to boost the bottom line, Nov. 17, 2008)

# Productivity / Motivation Value Chain

Vision / BHAG

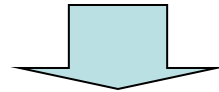
+ Empowered Involvement



Commitment

+

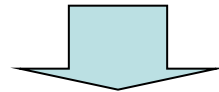
Positive Organizational Climate



Productivity

+

Innovation

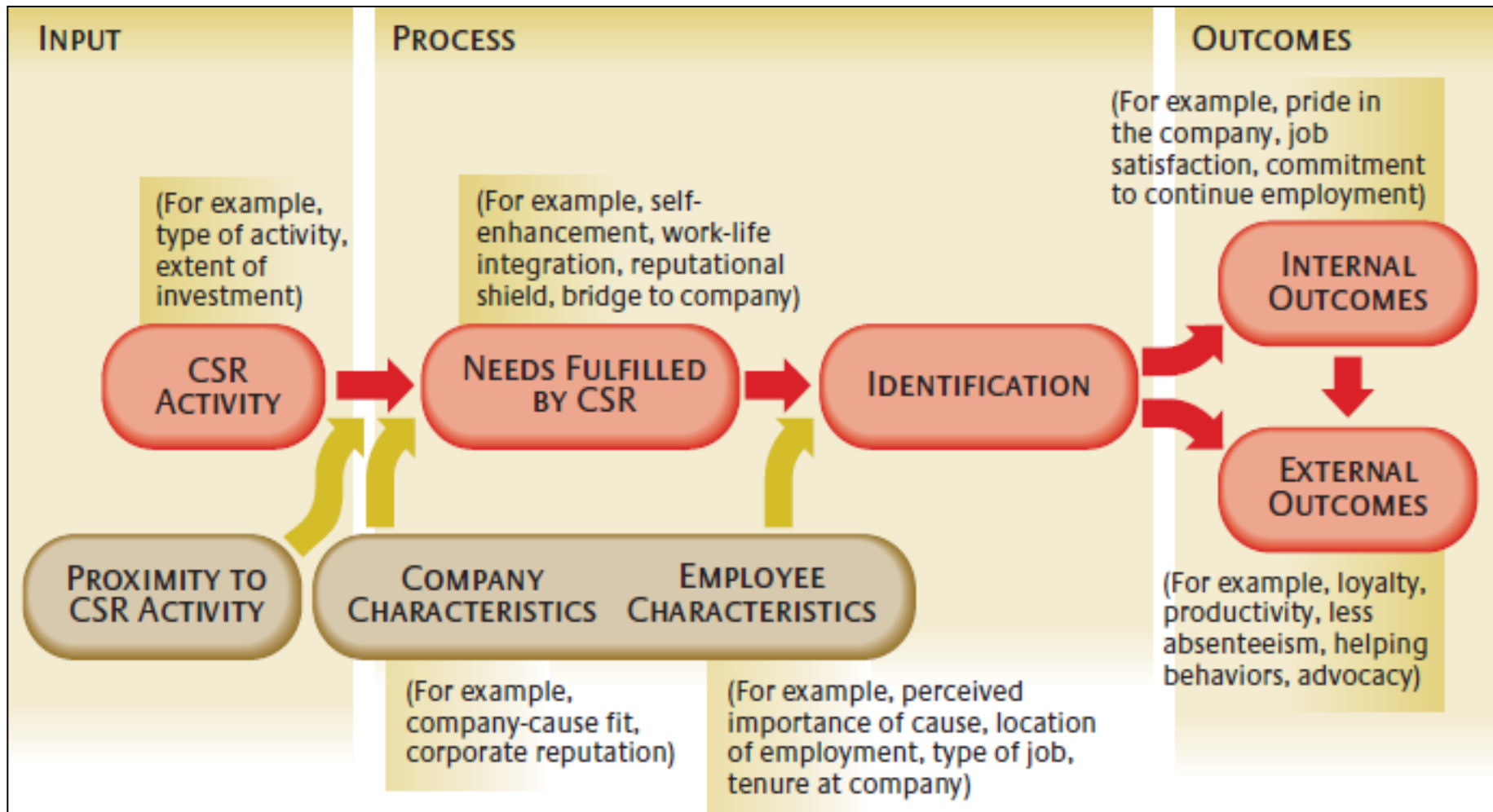


Bottom-line Benefits

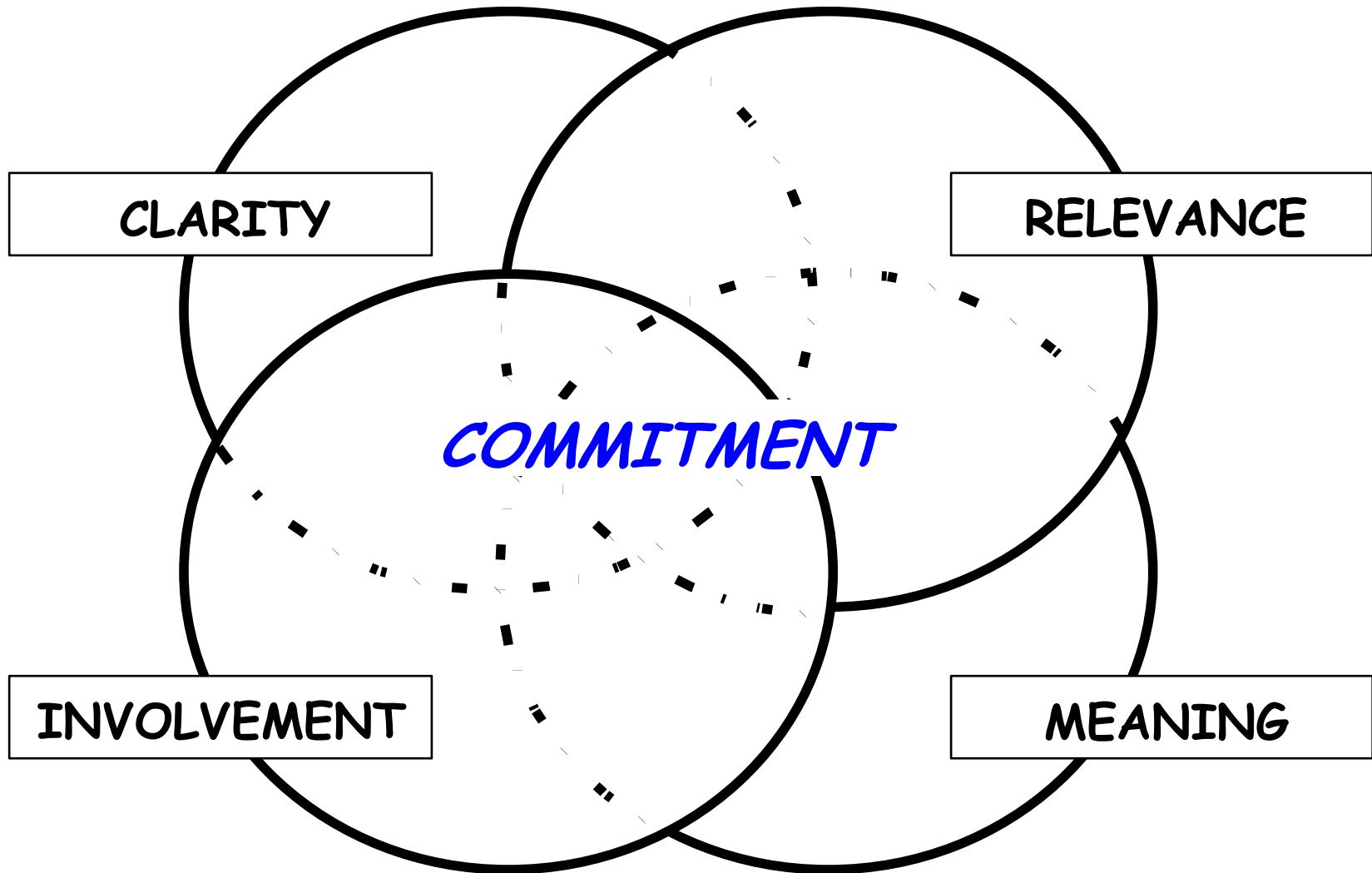


83% of employees in G7 countries say company's positive CSR reputation increases their motivation (GlobeScan 2006)

# CSR Activity Value Chain

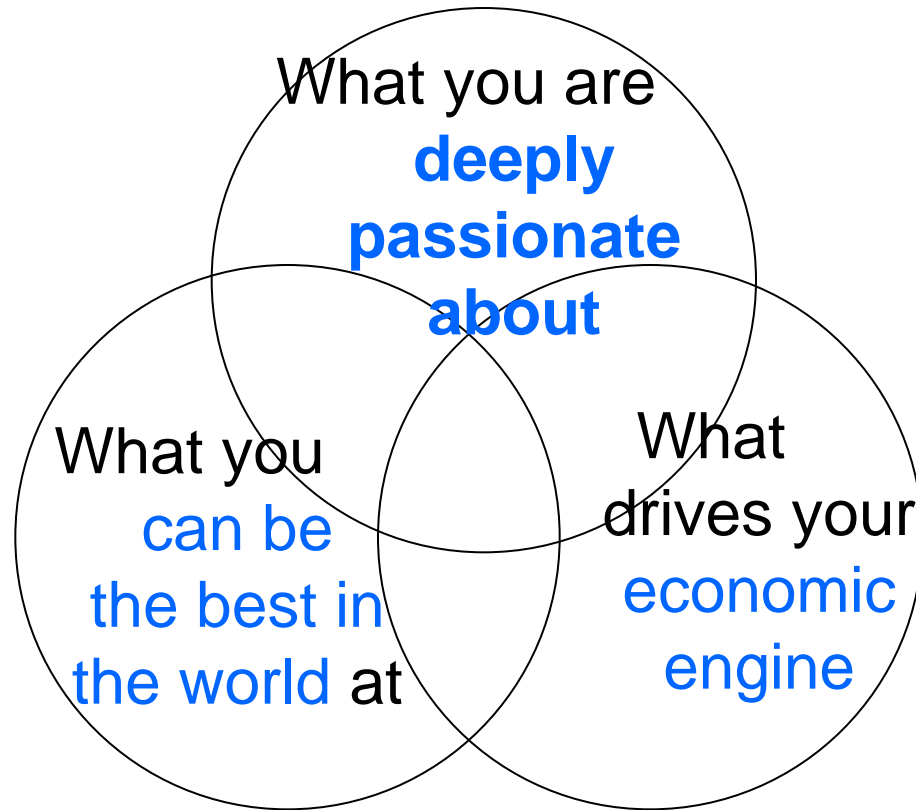


# 4 Factors Needed for Commitment





# 3 Circles of the “Hedgehog Concept”



# Increased Productivity

## 1. Individual employees

20% of employees are energized by SD initiatives

25% increase in their productivity

Average percent productivity increase: 5%



## 2. Improved teamwork between departments

0-100% possible e.g. Scandic Hotels

Average percent productivity increase: 2%

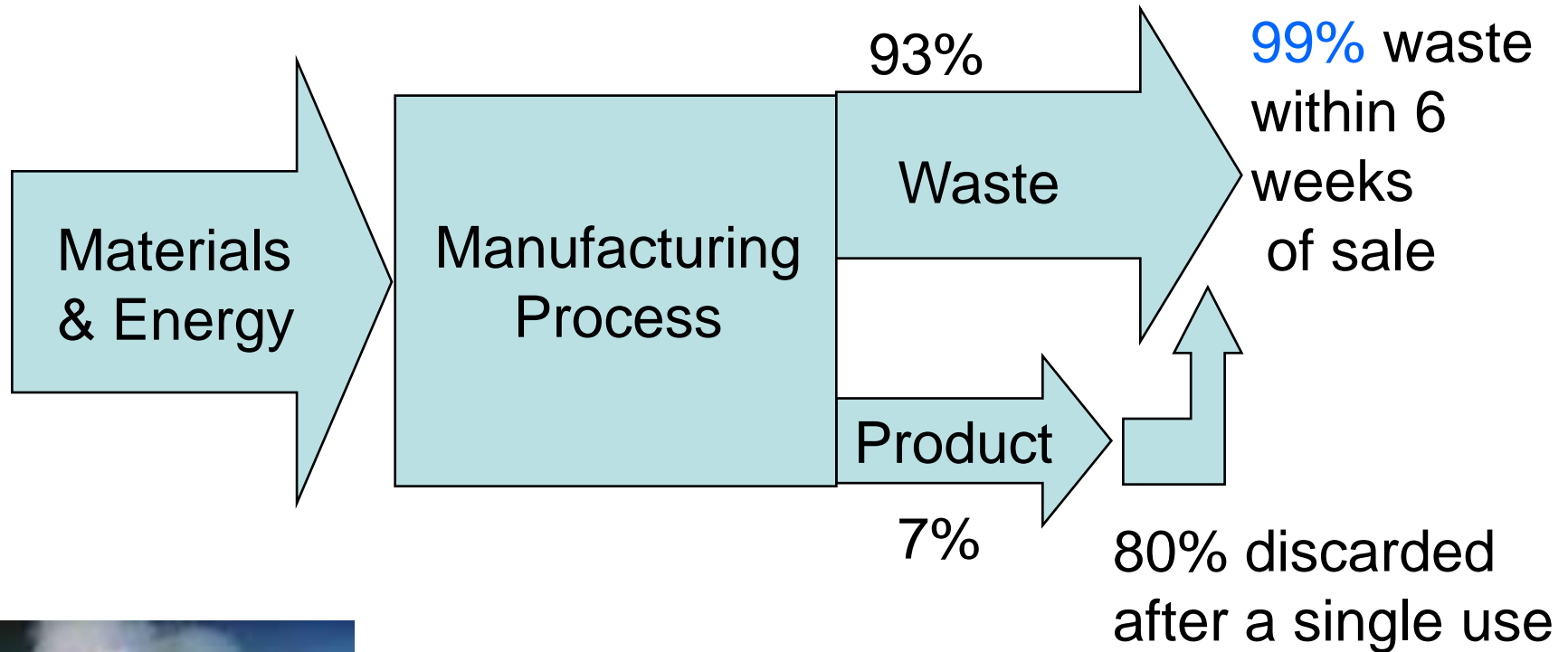
## 3. Improved working conditions

50% of employees' working conditions are improved

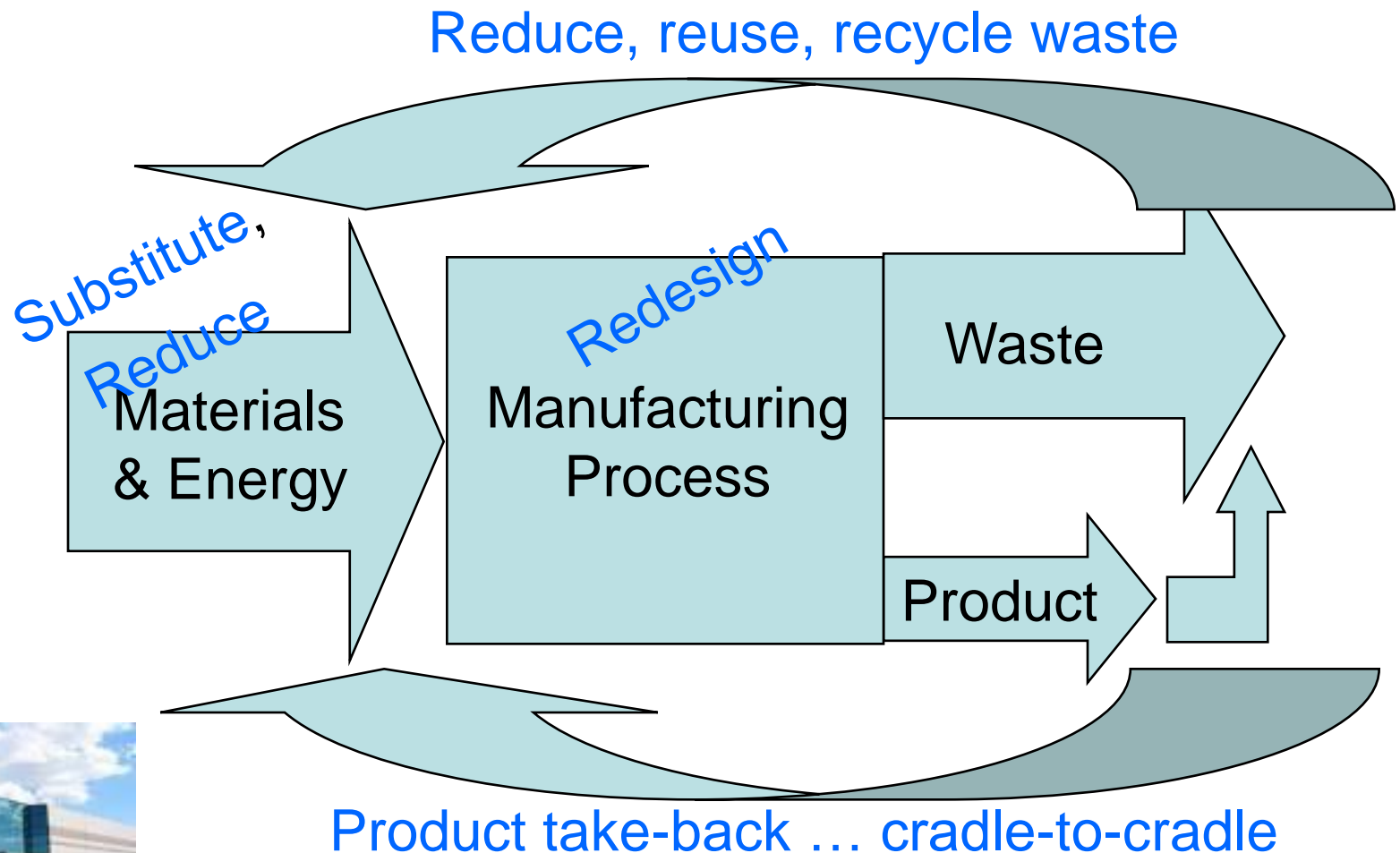
Joseph Romm: 7-15% productivity gain ... use 7%

Average percent productivity increase: 3.5%

# US Waste Story



# Eco-efficiency / Eco-effectiveness



# Cradle-to-Cradle (C2C) Certification

Product certification process by MBDC

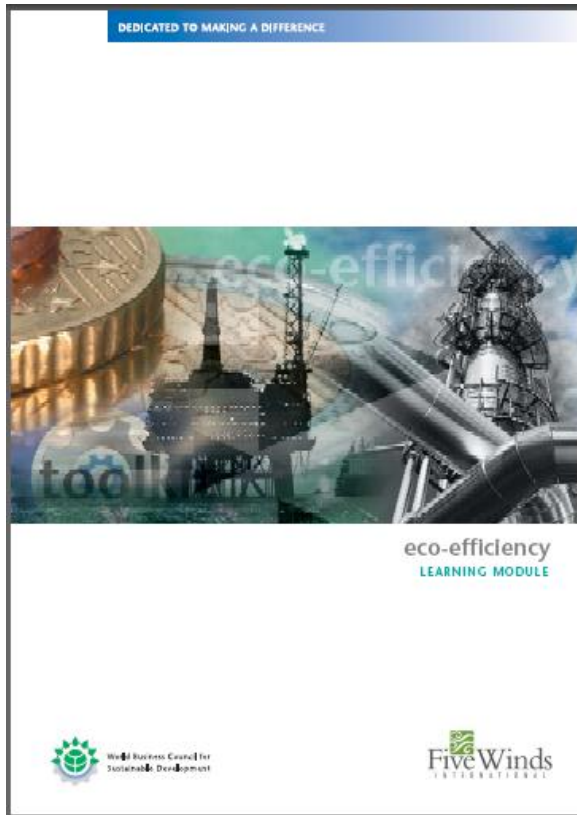
Branded as a 'Cradle to Cradle' product



Meets **environmentally-intelligent design**: environmentally safe and healthy materials, recycling, composting, using renewable energy and energy efficiency, efficient use of water, and instituting strategies for social responsibility

Certified as a **Silver, Gold or Platinum** product, or as a **Technical / Biological Nutrient**

# Eco-Efficiency REDUCES Impact



**R**educe the material intensity

**E**nergy intensity minimized

**D**ispersion of toxic substances is reduced

**U**ndertake recycling

**C**apitalize on use of renewables

**E**xtend product durability

**S**ervice intensity is increased

i.e. leasing, services vs. products,  
multi-functionality, easy upgrading

# Examples of Eco-Efficiency Savings



Pollution Prevention Pays (3P) employee suggestion program  
\$1B in first-year savings over 30 years (1975-2005)



21% energy savings since 2002-2007, saving \$18M in 2006



Reached its 2010 emissions reduction target in 2001  
\$650M savings



Retrofits of lighting, heat recovery from waste water, etc.  
Saved \$380K/year; targets \$1B / year at US plants

# Examples of Eco-Efficiency Savings



32% ROI on energy efficiency investments

Also reduced landfill waste by 80%, hazardous waste by 91%, overall emissions by 87%, and water usage by 67%, while doubling sales to more than \$2B (Forrester Research, 2008)



\$3M from 5% energy savings from lighting upgrades, HVAC retrofits, tweaking building temperature settings and shutting off idle computers; payback period of <3 yrs; plans to reduce waste by 99% by 2012 by eliminating 20M pounds of packaging, a move expected to save \$8.1M



# Examples of Eco-Efficiency Savings



Uses **7% less energy** than it did in 1990, despite producing 30% more goods; reduced bill by **\$3B** since early 1990s and **cut GHGs by 77%**



Saved **\$1M/yr by removing light bulbs** from employee soft drink machines

Saved **\$2.6M/yr by putting low-lead LEDs in freezers**

Saved **\$10M/yr** by more aggressively recycling cardboard and plastic

# Examples of Eco-Efficiency Savings



\$255M in savings and cost avoidance from environmental initiatives in 2005 vs. expenses of \$105.6 M  
Saved over \$100M from energy conservation since 1998



In California, reduced its waste by 95%  
Saved \$870K in 1998



Eliminated almost 40,000 gallons per year of waste water  
Saved over \$50K/year

# Examples of Eco-Efficiency Savings



In 4 years, Interface reduced total **waste** by 40%  
Saved **\$67M/year** and improved bottom line by 7%



Slashed PFC smelter **emissions** by 80%, saving **\$100M/ yr**



Reduced **GHG emissions** by 38% between 1990 and 2002;  
Saved **\$600M/ year** at Ludwigshafen site alone



In five years, increased production by 50% while **waste** emissions  
were cut by half; Saved **\$125M/year**

# The Economic Value of Corporate Eco-Efficiency

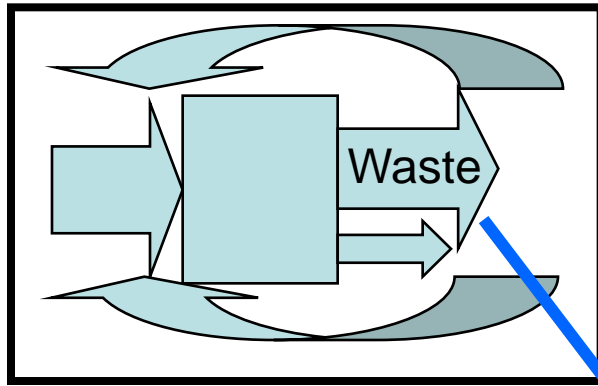
Erasmus University paper  
Won the 2005 Moskowitz Prize  
for Socially Responsible Investing

The stock market could provide higher value to companies  
rated above-average on environmental issues

Company managers **do not face a tradeoff** between eco-  
efficiency and financial performance

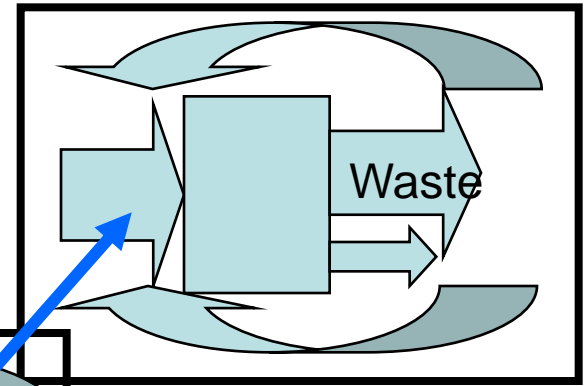
**Investors** can use environmental information for investment

# Industrial Ecology

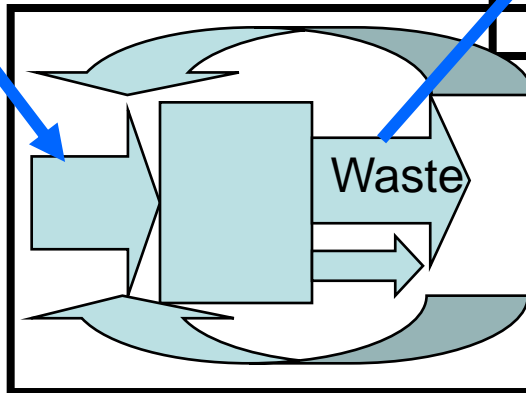


Other company

"Waste = Food"



Other company



Your company



# Reduced Manufacturing Expenses

## High-level benefit calculation

50% of revenue comes from hardware sales

Manufacturing cost of hardware is 30% of revenue

5% of costs can be saved by eco-efficiencies

NOTE: 50% of savings are retained to fund capital projects for further eco-efficiencies

## Checklist for detailed benefit calculation

Material and energy substitutions / reductions

3Rs for waste and take-backs

Packaging and transportation efficiencies

Faster approval cycles



# Reduced Commercial Site Expenses

## High-level benefit calculation

SG&A expenses are 15% of revenue

2% of SG&A expenses for water, energy, and consumables

20% of those expenses can be saved

## Checklist for detailed benefit calculation

Employee stewardship of consumables

Energy and water eco-efficiencies

3Rs for waste

Lower landscaping and maintenance costs

Savings in office space and business travel



# Increased Revenue

## High-level benefit calculation

0-??% increase in revenue is possible

Percent increase assumed: 5%

## Checklist for increased revenue

New “green” customers

More loyal customers

Services, dematerialization, leasing

Environmental services

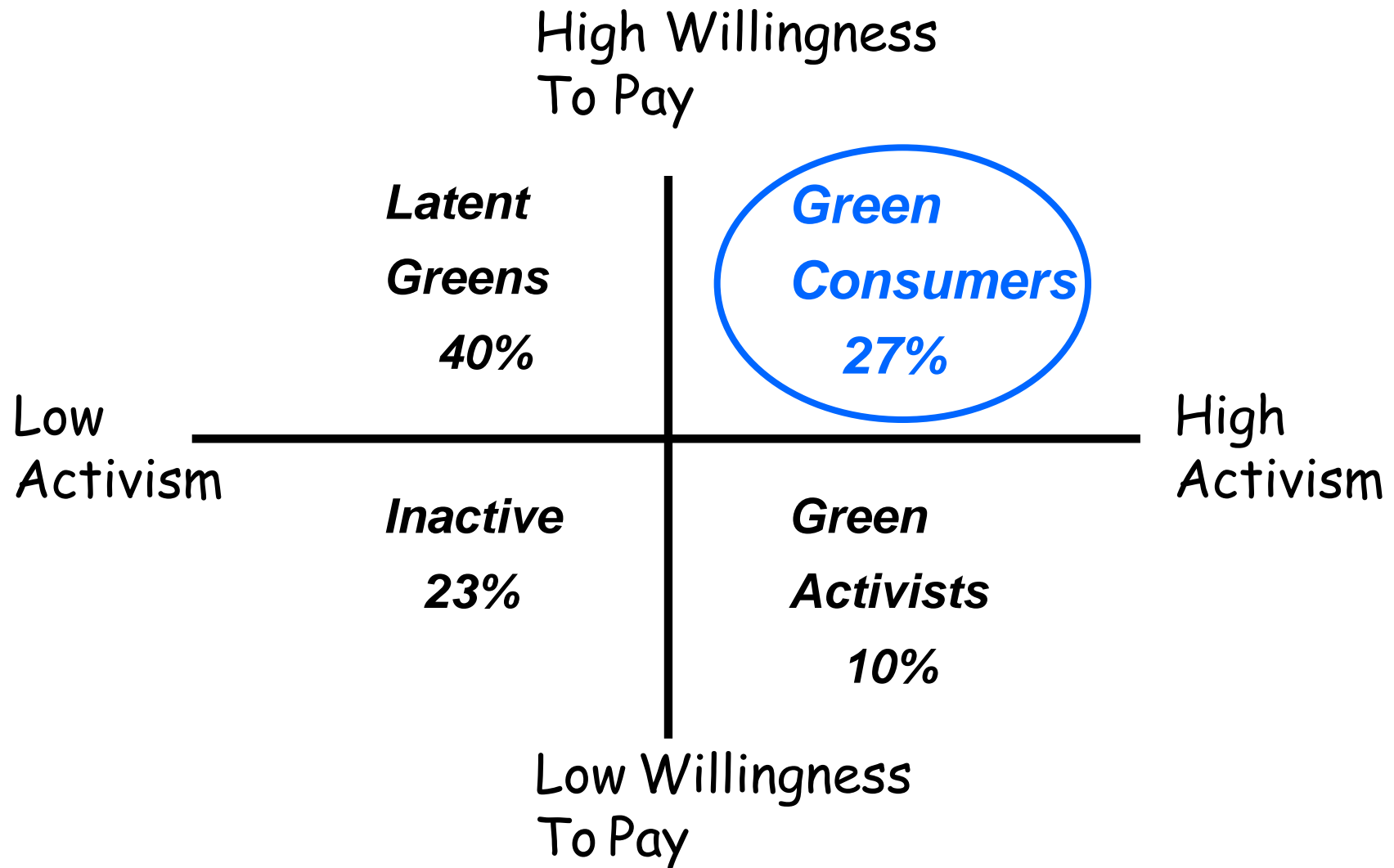
GHG emissions trading?

Net billing with electrical utility?

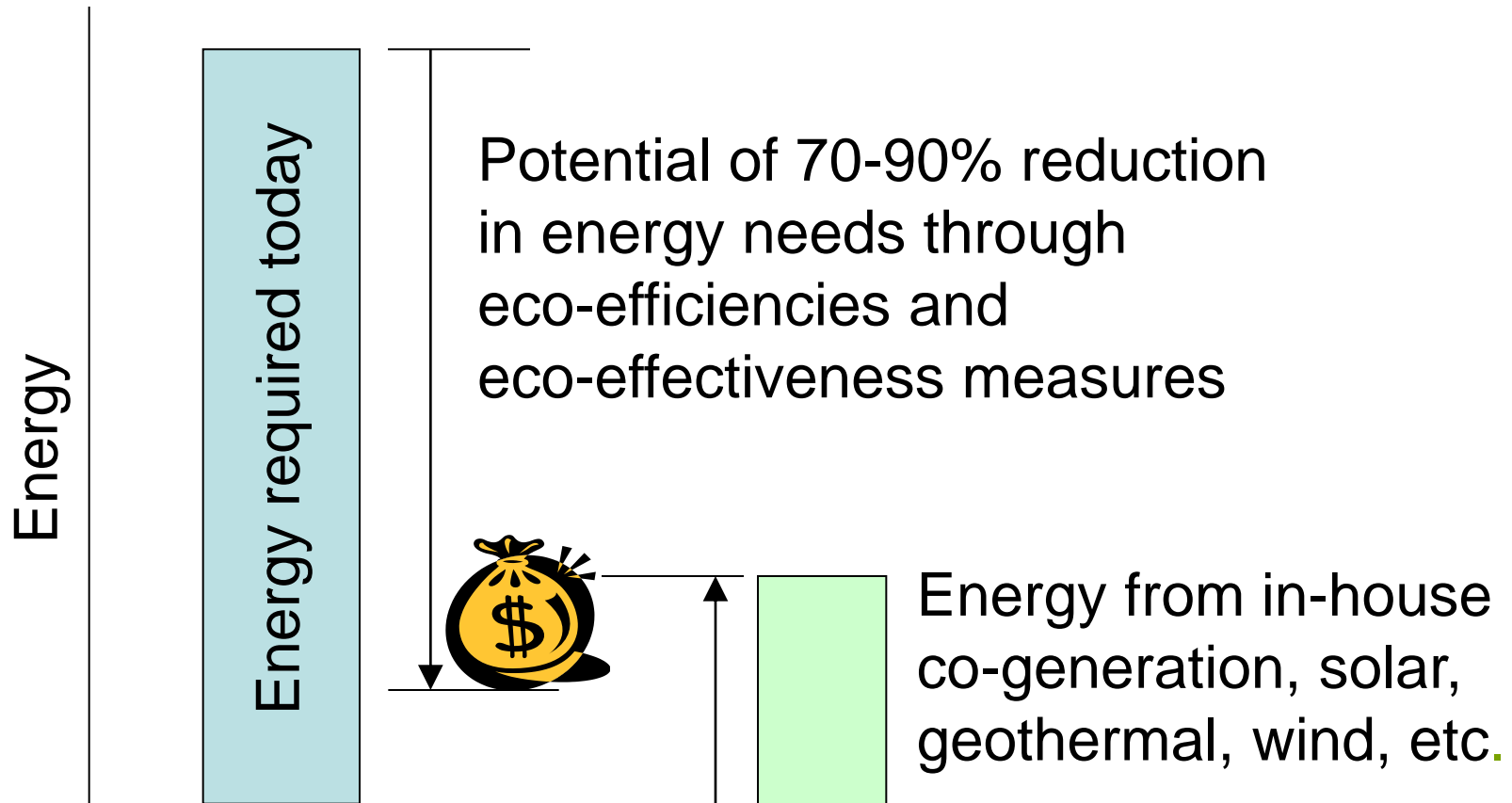




# Green Behavior Segments



# Energy Revenue Opportunity




# Savings from Risk Reduction

## High-level benefit calculation

SG&A expenses are 15% of revenue

5% of SG&A expenses are spent on insurance premiums, borrowing costs, and other risk mitigation items

## Methodology for scenario-based calculation

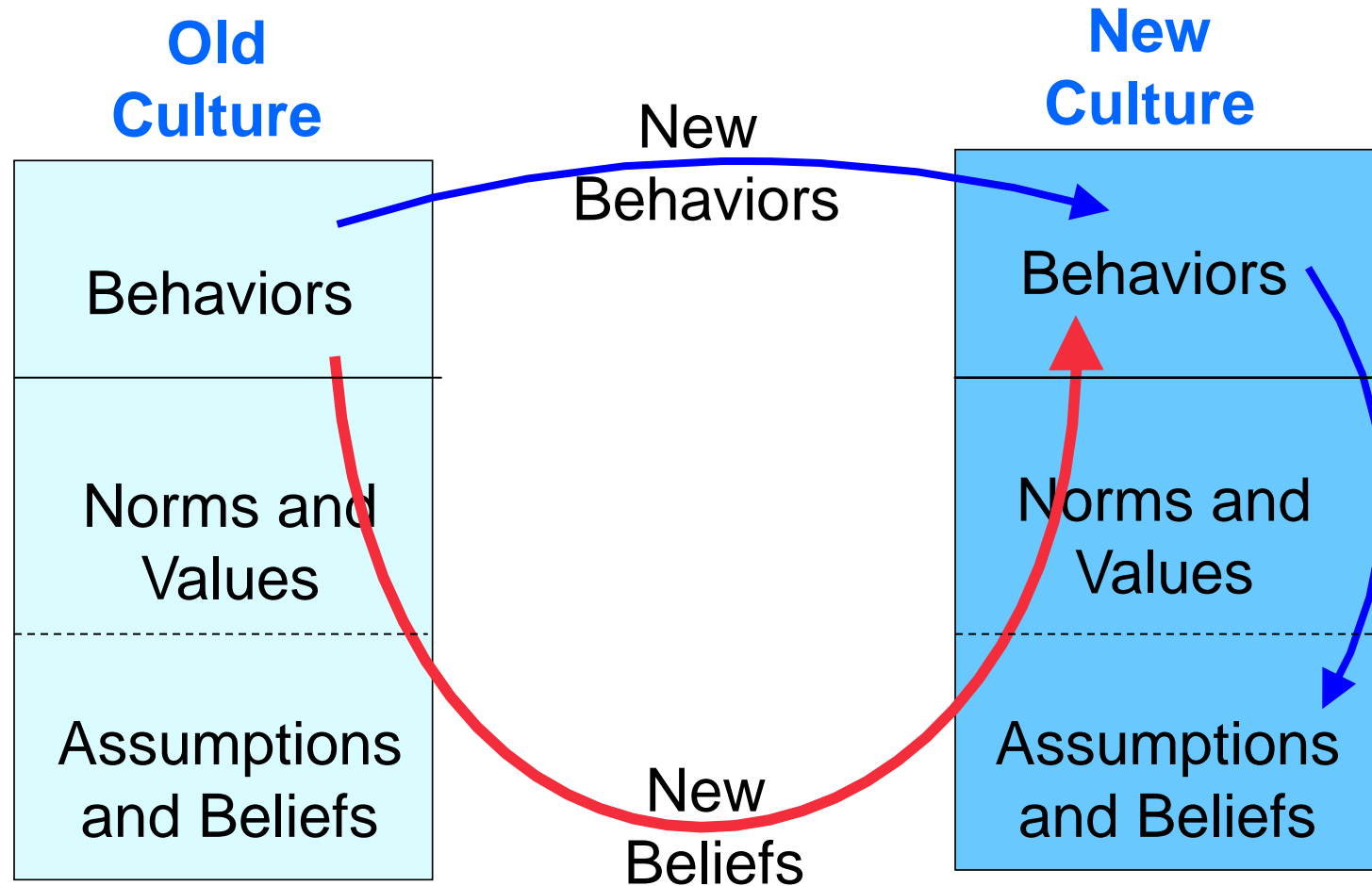
- 
- ```
graph TD; A[Planning] --> B[Information Gathering]; B --> C[Risk Analysis]; C --> D[Identifying & Selecting Safeguards]; D --> E[Implementation *]; E --> F[Monitoring *];
```
1. Identify salient future issues
  2. Build scenarios around each
  3. Assign probabilities to best & worst scenarios
  4. Assess company exposure to each issue
  5. Estimate \$ impacts contingent on each scenario

# Communicating the Business Case for Sustainability

**SUMMARY / CLOSE**

Slide Subset 9

# Culture Change



# Breakthrough Thinking Triggers

**Aspirational goals**

**Factor 10:** 10X or 1/10<sup>th</sup>

**Goal of zero ... or beyond zero**

**Hidden competitors**

**If it was a matter of life or death ...**

**Humor / fun**

# 4 Inhibitors to Next Wave

## 1. Lack of support from senior leaders

Too busy; Not strategic; No pressure from important people; Not our problem; Too hard to change; Personal credibility?

## 2. Fear of backlash

Don't want to blow own horn; Green-washing accusations? Open the floodgates? Skeletons in our closet

## 3. Weak / irrelevant business case

Doing enough; WIIFM? Short-term; Perverse subsidies; ROI criteria; Insulting; Too good to be true

## 4. Mindset

What problem? Anti-capitalistic; Government's problem; Negative baggage; MBA legitimacy?



# 12 Mega-trends on Corporate Horizon

1. **Climate Crisis:** Carbon caps; carbon taxes; impact on tourism
2. **Energy Crisis:** High energy prices; GHG risks; new clean / renewable / storage technologies; clean-tech wave
3. **Water Wars:** Conservation efforts; mass migrations; China, India, Australia + EU + NA; desalination technologies
4. **Pollution and Disease:** Pandemics; HIV / AIDS; new disease vectors; nutrition concerns; health & nutrition
5. **War on Poverty:** Globalization backlash; risk of civil disorder; closing the chasm between rich and poor; Paul Hawken's *Blessed Unrest* movement of movements
6. **Investor Activism:** Sizing of climate risks by mainstream investors



cont'd ...



# 12 Mega-trends on Corporate Horizon

7. **Erosion of Trust in Big Corps:** Enron, Tyco, etc.; local sourcing; BALLE movement
8. **Rise of the “Social Enterprise”:** Demand for transparency, disclosure, reporting; stakeholder capitalism vs. shareholder capitalism; revisiting purpose of the corporation
9. **Racial Tensions:** Immigration waves; racial tensions in developed countries; eco-refugees
10. **National Security:** Terrorism phobias; walled countries
11. **Re-legitimization of Role of Government:** EU and LA
12. **Succession of SME Ownership:** 82% of Canadian SME owners want to retire by 2020



# “Social Enterprise”

Question: What is the **purpose** of a corporation?

Old Answer: Contribute to **shareholder financial wealth**

New Answer: Contribute to **stakeholder genuine wealth**

**SustainAbility**: “Raising Our Game: Can We Sustain Globalization?” (May 07)

**Tomorrow's Company**: “Tomorrow's Global Company: Challenges and Choices” (June 07)

**Corporation 20/20**: “Paper Series on Corporate Design” from Summit on the Future of the Corporation (Nov 07)

**Tomorrow's Leaders Group** (WBCSD): “From Challenge to Opportunity” from Business Role in Tomorrow's Society (June 06)

# Fourth Sector / For-Benefits

For-Benefits are a new class of organization.

They are driven by a **social purpose**,  
they are **economically self-sustaining**, and  
they seek to be **socially, ethically, and environmentally responsible**

Like non-profits, For-Benefits can organize in pursuit of a wide range of **social missions**.

Like for-profits, For-Benefits can generate a **broad range of beneficial products and services** that improve quality of life for consumers, create jobs, and contribute to the economy.

For-Benefits seek to maximize benefit to all stakeholders, and **100% of the economic "profits" they generate are invested to advance social purposes.**

# B Corporation Certification

A new type of “**Beneficial**” corporation that is purpose-driven and **creates benefit for all stakeholders** (employees, the community and the environment), not just shareholders

Aligns with the **Fourth Sector** notion of “**for-benefit**” organizations and **social entrepreneurialism**

Must meet exacting standards for environmental and social performance

**Certified** by the B Lab’s independent Standards Advisory Council, a nonprofit organization  
(Launched July 07)

**80 certified U.S. companies** in 17 states and 20 industries, with \$650M in revenues (as of March 08)



# Internalizing Environmental Externalities

## Solid Waste

Levies, tipping fees

## Water Pollution

Filtration systems, permits, water & sewer charges, fines

## Air Pollution

Filtration systems, permits, fines,  
+ price of carbon thru carbon taxes or cap-and-trade systems

# The Two Games CEOs Play



## Rules

Limited liability  
Shareholder is king  
Financial metrics only  
Externalities are good



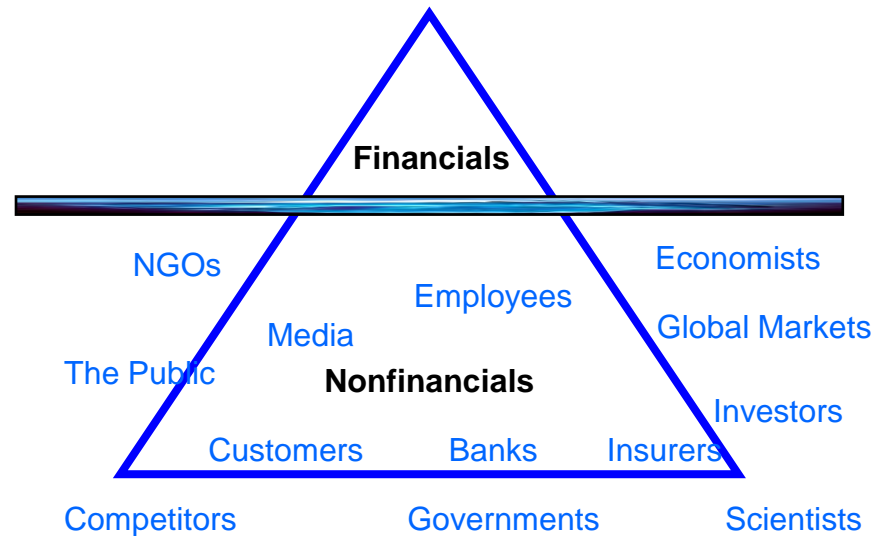
## Rules

Personal liability  
Family are kings/queens  
Genuine wealth matters  
Support the common good

# CEO



Besieged by  
important stakeholders  
9 AM – 5 PM



# Sustainability “Pincer Strategy”

9 AM – 5 PM  
“CEO”



Besieged by  
important **stakeholders**

24/7  
“Daddy” / “Mommy”



Besieged by  
**their kids**



# 7 Worries

1. **UN Millennium Ecosystem Assessment:** 15 of 24 ecosystems (60%) are being degraded or used unsustainably; GEO-4
2. **Climate crisis:** Urgency; IPCC Report re dire consequences
3. **BRIC growth:** Brazil, Russia, India & China; pollution & GHGs
4. **Energy crisis:** Transformation to renewable sources; disconnecting GDP growth from energy growth; peak oil?
5. **Growing chasm between the rich & poor:** Developed vs. developing countries; In developed countries
6. **Population Explosion:** Level off at 9B+? Why?
7. **Need for holistic solutions:** Strength of national / international governments? Political courage?



# 10 Signs of Hope

1. **Investor Activism:** Carbon Disclosure Project; US Investor Network on Climate Risk (INCR); Bank of America, Citigroup, JP Morgan Chase, Goldman Sachs; Equator Principles
2. **Economist Warnings:** Stern Review; urge cap-and-trade
3. **Public Awakening:** Hurricane Katrina; “An Inconvenient Truth” and the “Goracle Factor;” “carbon neutral” word of the year in 2006; mainstream press coverage
4. **Values-driven consumers:** “green is the new black;” LOHAS (\$230B market); organics; hybrids; sustainable consumption
5. **High Energy Prices:** Eco-efficiency savings; explosion of renewable energy; clean tech magnet for venture capital



cont'd ...

# 10 Signs of Hope

6. **Clean Tech Explosion:** Venture capital focus on wind, solar, biofuels, hydrogen; battery breakthroughs; CCS for coal
7. **Carbon Trading Carrot:** EU; US states; Corporate pressure
8. **EU Market Leadership:** WEEE, REACH, RoHS, EUP, Climate Change Policy; UK / London GHG reduction goals
9. **Corporate Leadership in the supply chain:** Wal-Mart, GE, DuPont ...
10. **Nature's Resilience**



# 2007 Battery Breakthroughs

- **Rechargeable Lithium-Ion Battery** -- *Stanford*  
Use silicon nanowires to produce 10X electricity
- **Super Charge Lithium-Ion Battery (SCiB)** – *Toshiba*  
Recharges 90% in 5 minutes; lifespan of 10 years; will ship in Mar 08 to industrial sector; automotive sector next
- **High-Performance Lithium-Ion Battery** – *Japanese JV*  
GS Yuasa, Mitsubishi, and Mitsubishi Motors; for electric vehicles and plug-in hybrid vehicles
- **Li-Tech “Separion” Lithium-Ion Battery** – *German JV*  
Bosch, BASF, and Volkswagon; electrodes are separated by a flexible ceramic membrane for greater thermal stability
- **E-Flex Design Studio** -- *General Motors*  
Electric plug-in vehicles; Chevrolet Volt by 2010



# 7 Reasons Sustainability Is Not a Fad

1. The Climate Crisis is permanent
2. The Energy Crisis is permanent
3. It's personal: Me, my kids, my grandkids vs. spotted owl
4. Investors, Banks, and Economists care: Factoring climate change and energy crisis risks into rates and decisions
5. Mainstream media is on board: Regular, in-depth coverage
6. Politicians are reacting: Political courage is building
7. Clean technology is changing the game: We are on the cusp of a new generation of clean-tech products and services

# 7 Bold Strokes for Sustainability

If I were in charge for a day ...

1. **Education for sustainability:** Integrate ESD into the formal, non-formal, and informal education systems
2. **Genuine Progress Indicator (GPI):** Replace GDP; include annual national ecological footprint report
3. **Ecological tax shifting:** Tax pollution, carbon, and waste; incent employment, renewables, capital stock retrofits, responsible consumption, and energy efficiency
4. **Eliminate perverse subsidies:** Shift from fossil fuel / nuclear industries to clean tech, co-gen, and renewables; moratorium on coal-fired plants / oils sands until CCS proven

cont'd ...

# 7 Bold Strokes for Sustainability

5. **Carbon trading:** Implement an aggressive cap-and-trade carbon emission system with auctioned permits
6. **Lead by example:** Mandate “green” government procurement and buildings; design energy-efficient cities
7. **War on poverty:** \$10/hr minimum wage; \$35K “min-come”; affordable housing, daycare, education; reduce rich-poor gap

+ sense of urgency

+ citizen engagement and mobilization

# Perverse Subsidies

Fossil-fuel subsidies are \$200 B a year, versus support for low-carbon technologies of \$33B annually

Are “perverse subsidies” because subsidize environmentally destructive behavior.

Citizens pay twice: their taxes pay for the subsidies, plus have to pay the direct and indirect costs of environmental restoration and health care.

Investment in R&D in low-emissions technology has to triple to \$90B per year by 2015 and to \$160B by 2025, in order to stabilize CO2 concentrations at 550 parts per million (ppm)



# U.S. Military Spending

The U.S. spends more than **\$700B a year** on the military (2008)  
\$507B for Department of Defense and nuclear weapons  
\$190B for military operations in Iraq and Afghanistan  
Department of Homeland Security and other agencies

U.S. has approved **\$700B for Afghanistan and Iraq wars**, so far

U.S. accounts for roughly **half of the world's military expenditures**

More than **half of all discretionary federal spending** is now directed to the military

# “The \$3T Iraq War”

Estimates based on 5 years of Iraq War, Mar 2003 to Mar 2008

Cost to U.S. of \$3T, plus another \$3T to rest of world, vs. \$50B original estimate (now spent every 3 months)

For 1/6 the cost of the war, the U.S. could put its Social Security system on sound footing for more than a half-century, without cutting benefits or raising contributions

Funded with deficit spending and foreign loans: the first war in U.S. history without higher taxes; cost is being passed onto future generations; U.S. nation debt is \$2T higher

52,000 war veterans have PTSD; disability compensation needed for 40% of the 1.65M troops already deployed

2 Winners: oil companies & defense contractors

Joseph Stiglitz, 2001 Nobel Prize in economics, Op Ed in Seattle Post-Intelligencer, Mar 13, 2008, based on his study w Study w Harvard's Linda Bilmes

# The Chasm Between Rich & Poor in U.S.

In 2004, the richest 1% in the U.S. held over \$2.5T more in net worth than the entire bottom 90%

In 1976, the top 1% in the U.S. received 8.8% of national income.  
In 2005, they grabbed 21.9%

In 2007, the average Fortune 500 CEO made 364 times an average worker's pay, up from a 40 times in 1980

Overall compensation and benefits at seven of Wall Street's biggest firms totaled \$122B in 2007, up 10% since 2006

A few private equity and hedge fund managers make \$1B a year.  
Their tax rate is less than half of a \$200K earner

One in six U.S. children live in poverty

More than 45M people in the U.S. do not have health insurance

“The Shameful State of the Union,” by Robert Weissman, January 29, 2008

# The Wealth Chasm in Canada

Average minimum wage: \$16.6K / full-time year

Average wage: \$38.9K / full-time year

Average top-10 CEO income:

CEOs of listed, publically-traded companies

\$3,059K to \$54,709K: \$8,528K / year

\$16.6K / 4.1 hours ... by 1:04 PM, Jan. 1

\$38.9K / 9.5 hours ... by 10:33 AM, Jan 2

1998-2006 increase, adjusted for inflation

Average wage: 18%

CEO income: 146%

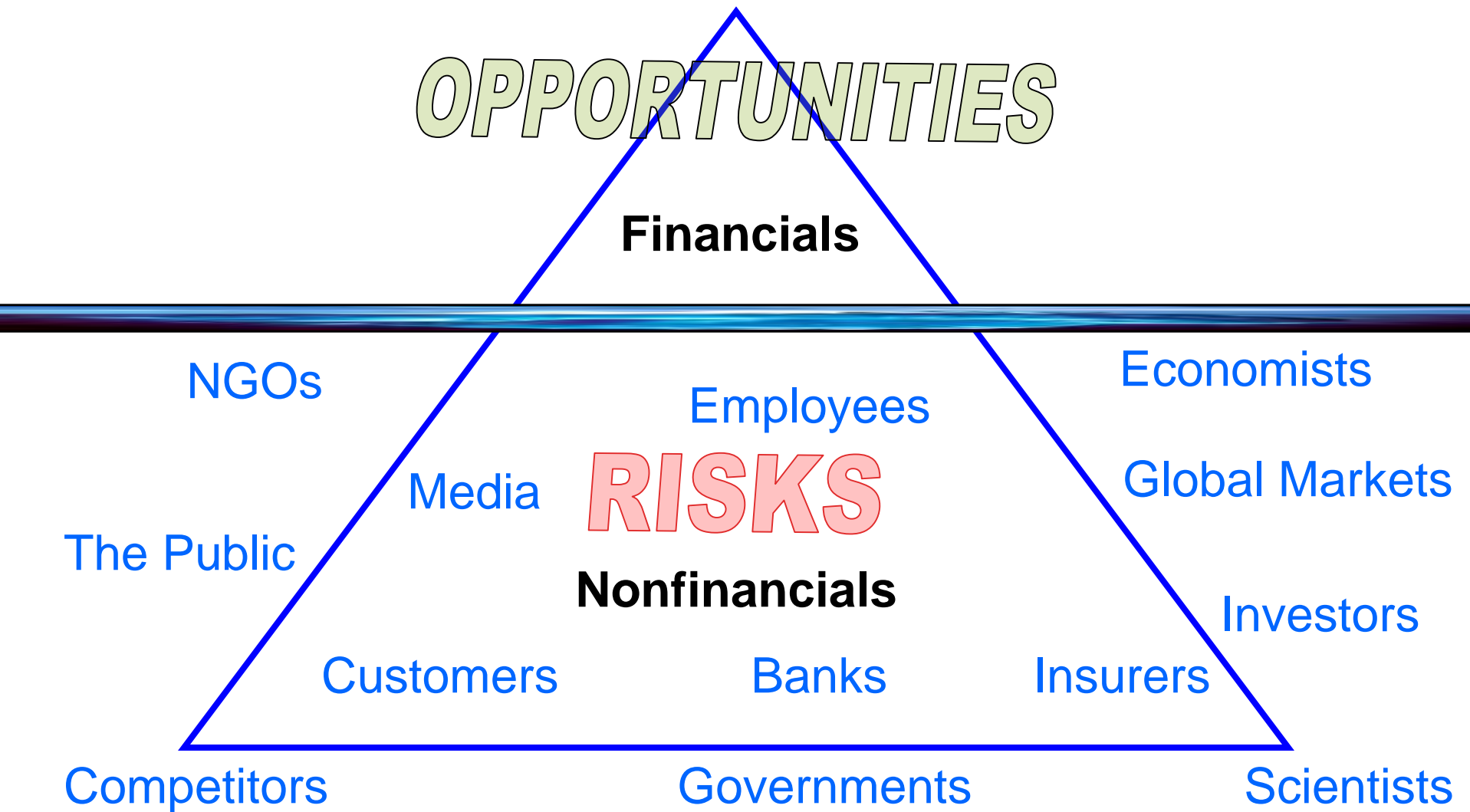
Top-10 CEO income in 1998: 104 x average income

Top-10 CEO income in 2006: 218 x average income

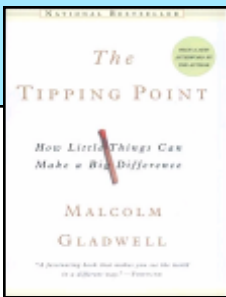
**Is this sustainable?**



# Two-Part Business Case



# The “Tipping Point”?



20%

**4. Integrated Strategy**  
Enhanced business value

**5. Purpose/Passion**

Values-driven founder / CEO



**3. Beyond Compliance**

Eco-efficiencies/

PR crisis/

Regulatory threat

**2. Compliance**

Regulatory enforcement

**1. Pre-Compliance**

# In Summary ...

Sustainability is smart business

Business language applies

Important stakeholders' expectations are rising

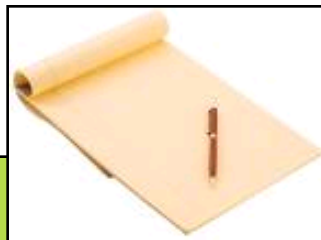
New market forces & risks are in play

Relevant to existing business priorities

Can protect & enhance company value

Many willing, helpful partners

Opportunity for leadership ... by example



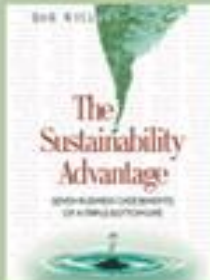
# Resources

**BOB WILLARD**

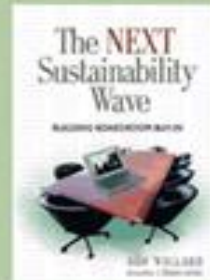
THE BUSINESS CASE FOR SUSTAINABILITY



SIX RESOURCES SUSTAINABILITY CHAMPIONS CAN USE TO INCREASE "THE RIPPLE EFFECT"



*The Sustainability Advantage* provides the first systematic quantification of the seven benefits of corporate sustainability strategies.



*The Next Sustainability Wave* provides valuable insight into communicating with corporate leaders in their own language to bring about enlightened self-interest.



*The Business Case for Sustainability* DVD captures Bob's presentation about how to convince executives to embrace sustainability.



*Sustainability Advantage Worksheets - Large Enterprise Version* are a fully customizable set of the worksheets found in the appendix of *The Sustainability Advantage*.



*Sustainability Advantage Worksheets - SME Version* are a fully customizable set of the worksheets found in the appendix of *The Next Sustainability Wave*.



*The Master Slide Set* includes the 30-40 slides Bob usually uses in his presentations, plus another 150 or so backup slides.

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[www.sustainabilityadvantage.com](http://www.sustainabilityadvantage.com)



# Communicating the **BUSINESS CASE** for Sustainability

