

# The Business Case and Beyond

How Deep Integration of Sustainability Thinking Creates Lasting Value

Scott Lewis, CEO  
Brightworks Sustainability Advisors

19 November 2010



BRIGHTWORKS™

- Introductions
- What *IS* Sustainability?
- The Sustainability Value Proposition
- Q and A



# Introductions





## SUSTAINABLE BUILT ENVIRONMENT

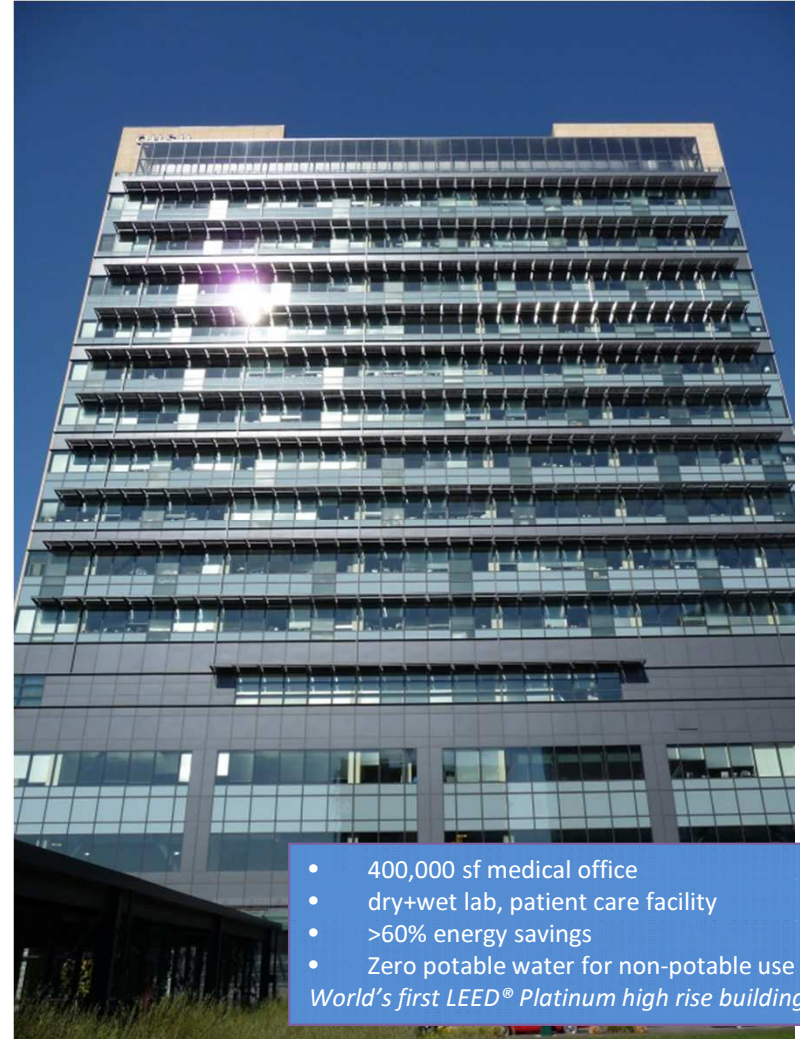


Bancolombia Headquarters, Medellín, Colombia



Goyang Korea, 7,000-acre master plan

## About Brightworks



- 400,000 sf medical office
  - dry+wet lab, patient care facility
  - >60% energy savings
  - Zero potable water for non-potable use
- World's first LEED® Platinum high rise building*

The OHSU Center for Health and Healing



## SUSTAINABILITY CAPACITY BUILDING



# About Brightworks

### Brightworks' Sustainability Training Catalog: The Training you Want, When and Where you Want it

While we offer regularly scheduled LEED exam trainings and sustainability continuing education opportunities around the country, some organizations prefer private trainings to suit the needs of their employees. We're happy to customize our offerings around your needs, schedule and location. Give us a call at 415-992-6850 or email [workshops\(at\)brightworks.net](mailto:workshops(at)brightworks.net) to explore what we can offer your organization.

#### How can we add value to your organization?

LEED Exam Training Workshops

The Business Case  
for Sustainability

Biomimicry:  
Emulating Nature's Genius

LEED for Existing Buildings:  
Operations & Maintenance™  
Overview & the Business Case

Succeed at LEED

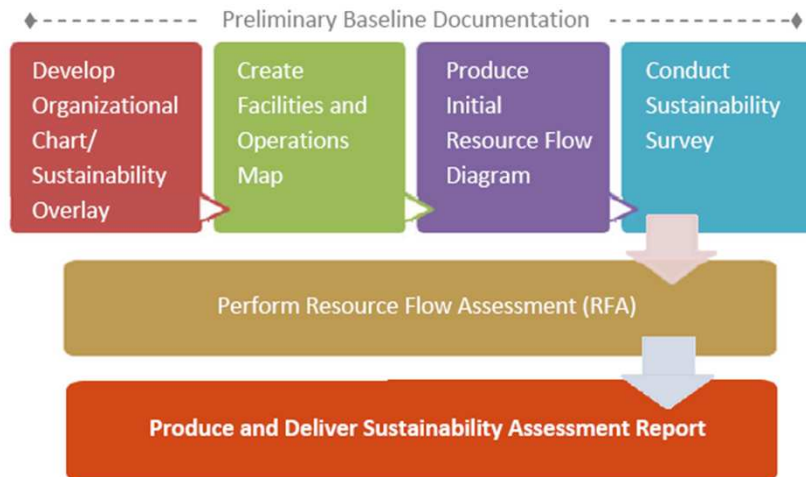
Sustainable Development  
for Urban & Rural Districts

Envisioning Fully  
Sustainable Buildings

Organizational  
Carbon Footprinting

LEED for  
Construction Managers

## ORGANIZATIONAL SUSTAINABILITY



## About Brightworks



US Santa Barbara : Comprehensive Campus Sustainability Plan

## CURRENT AND RECENT CLIENTS

# About Brightworks



-- over 120 projects completed --

- including over 90 LEED certified buildings
- Large organizational sustainability projects
- And hundreds of workshops





## EDUCATION PROVIDER

### Brightworks

is a USGBC Education Provider committed to enhancing the professional development of the building industry and LEED Professionals through high-quality continuing education programs.

As a USGBC Education Provider, we have agreed to abide by USGBC-established operational and educational criteria, and are subject to course reviews and audits for quality assurance.

**GBCI**  
**CMP**

The Business Case for Sustainability - 90004075

Approved for

7

GBCI CE Hours for LEED Professionals.



# AIA/CES

Brightworks is a Registered Provider with The American Institute of Architects Continuing Education Systems. Credit earned on completion of this program will be reported to CES Records for AIA members. Certificates of Completion for non-AIA members are available on request.

This program is registered with the AIA/CES for continuing professional education. As such, it does not include content that may be deemed or construed to be an approval or endorsement by the AIA of any material of construction or any method or manner of handling, using, distributing, or dealing in any material or product. Questions related to specific materials, methods, and services will be addressed at the conclusion of this presentation.

# Copyright Materials

This presentation is protected by US and International copyright laws. Reproduction, distribution, display and use of the presentation without written permission of the speaker is prohibited.

© Brightworks 2010





# Course Objectives

1. Develop understanding of the Value Proposition for Sustainability (The Business Case, and Beyond)
2. Deepen understanding of what is meant by “Sustainability”
3. Enhance ability to articulate the business benefits of green building and LEED from a tactical and prescriptive approach
4. Identify tools and techniques necessary to deliver an effective and compelling successful business case for sustainability



# Sustainability 101

...or, “*what does sustainability mean?*”

## Define Sustainability



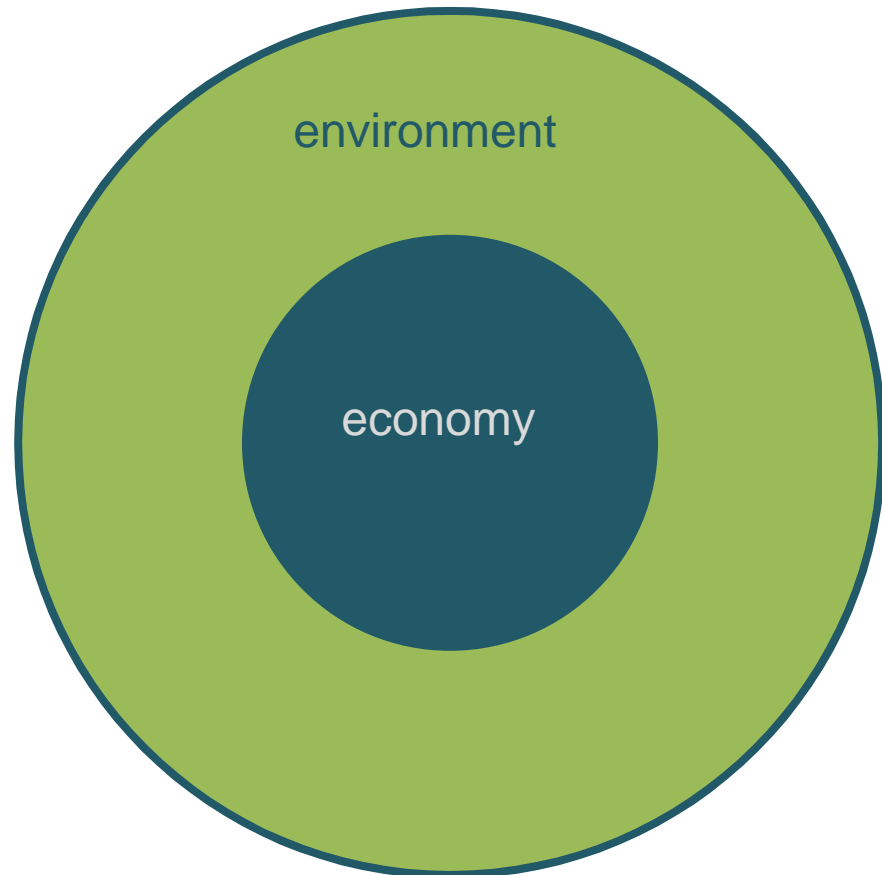
BASIC CONCEPTS

# Sustainability 101



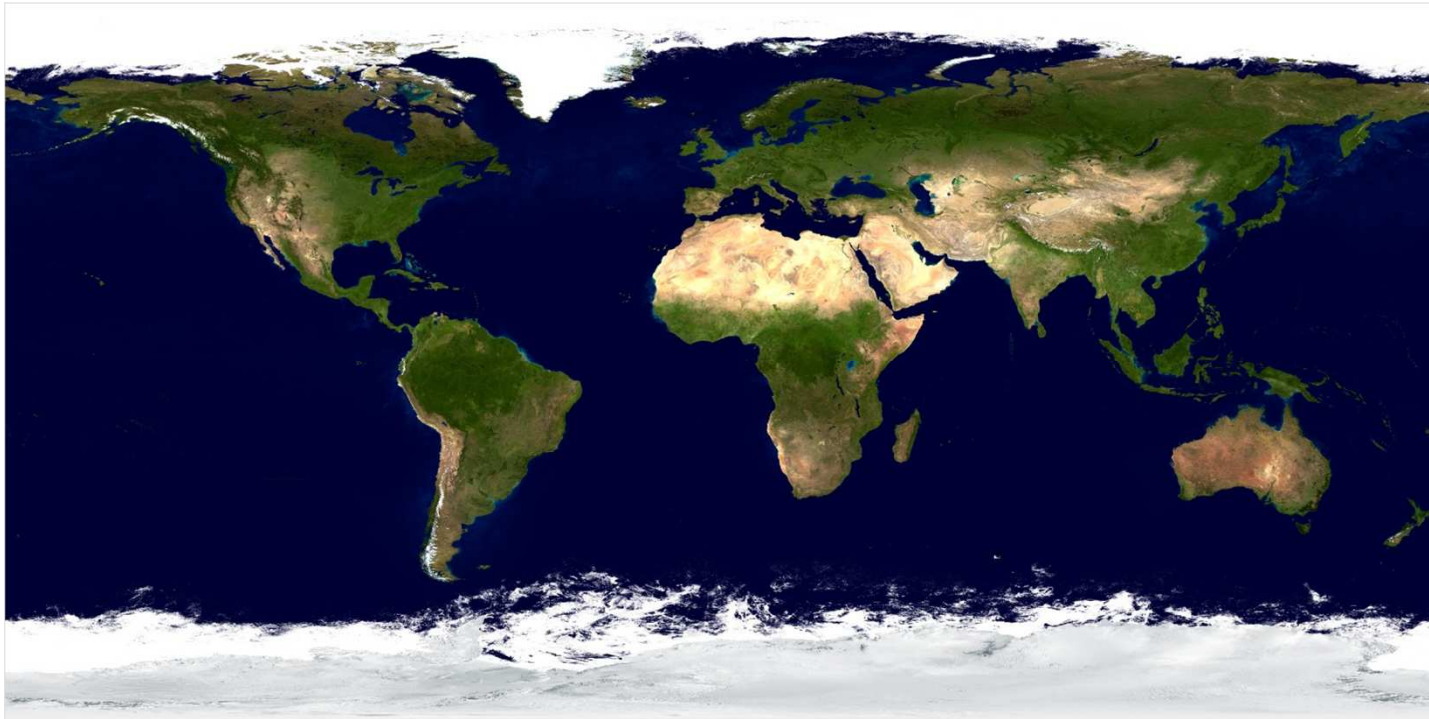
‘The economy is wholly-owned subsidiary of the environment’

-Ray Anderson, CEO, Interface



## DEFINITIONS

### “UN DEFINITION”



Sustainable Development is development which meets the needs of the present without compromising the ability of future generations to meet their own needs.

World Commission on Environment and Development (The Bruntland Report 1987)

## DEFINITIONS

### TRIPLE BOTTOM LINE (TBL)

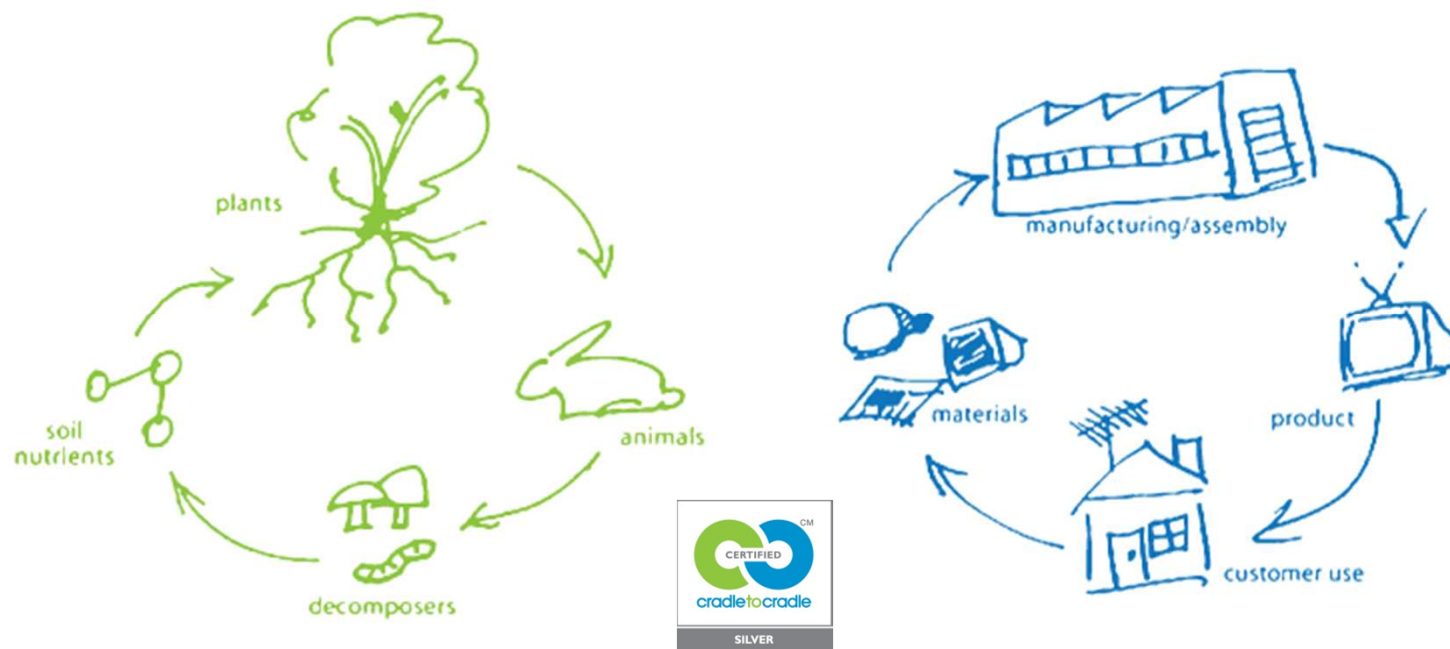


“People, Planet, Profit” or “Economy, Environment, Equity”



## DEFINITIONS

### CRADLE TO CRADLE (C2C): Biological and Technical Nutrient Cycles



## DEFINITIONS

### THE NATURAL STEP: Four “System Conditions” of Sustainability

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 by physical means,**

and, in that society...



**...people are not subject to conditions that systematically undermine their capacity to meet their needs.**

## SUSTAINABLE VERSUS GREEN

# Sustainability vs. Green

*What's the Difference?*

Incremental



V.

Transformative



?

60 miles per gallon



Zero emissions

"40% better than code"



100% renewable power

Recycling



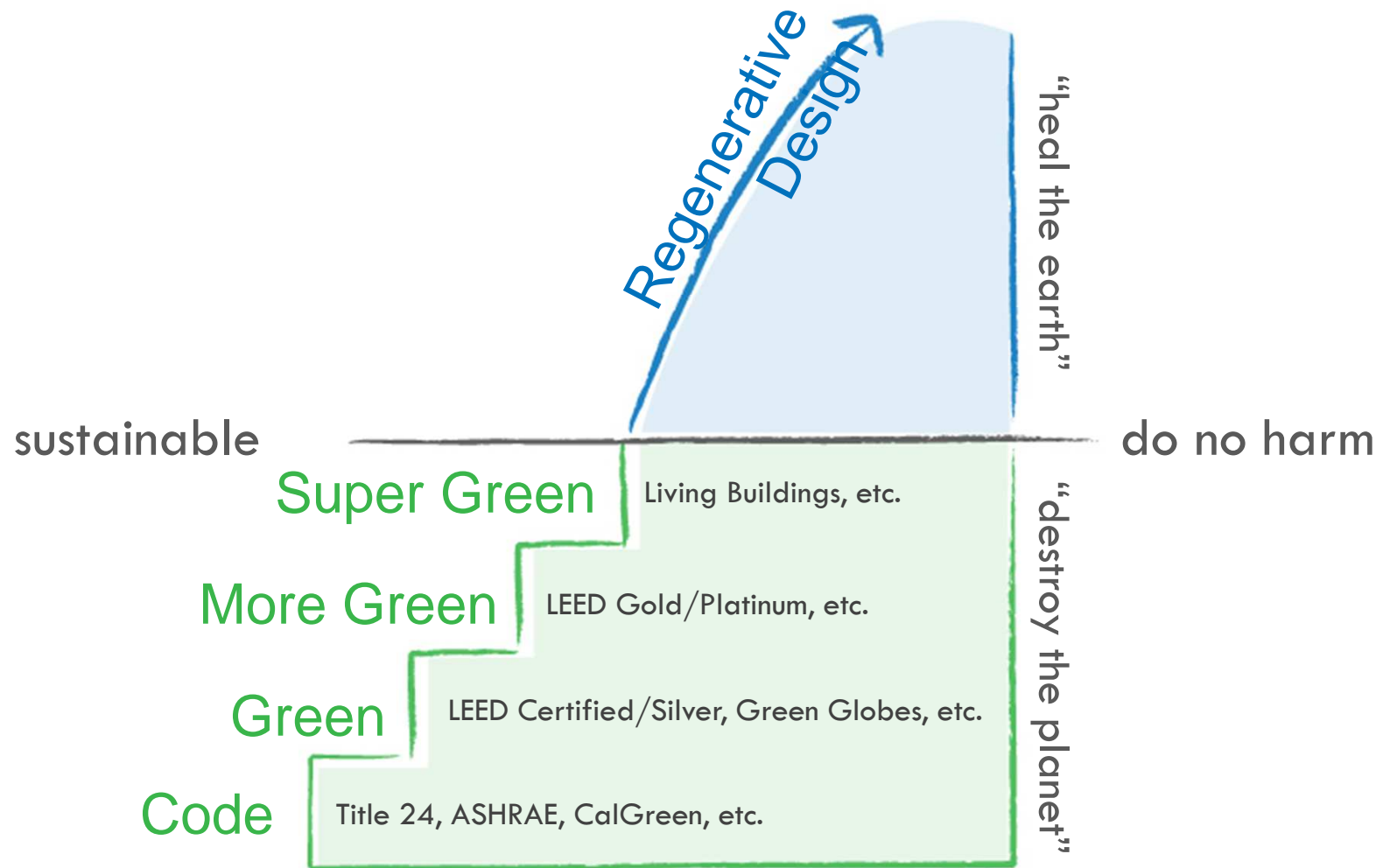
Zero waste

Less toxics



Zero pollution

## "BEYOND SUSTAINABILITY"



## REGENERATIVE DESIGN - EXAMPLE

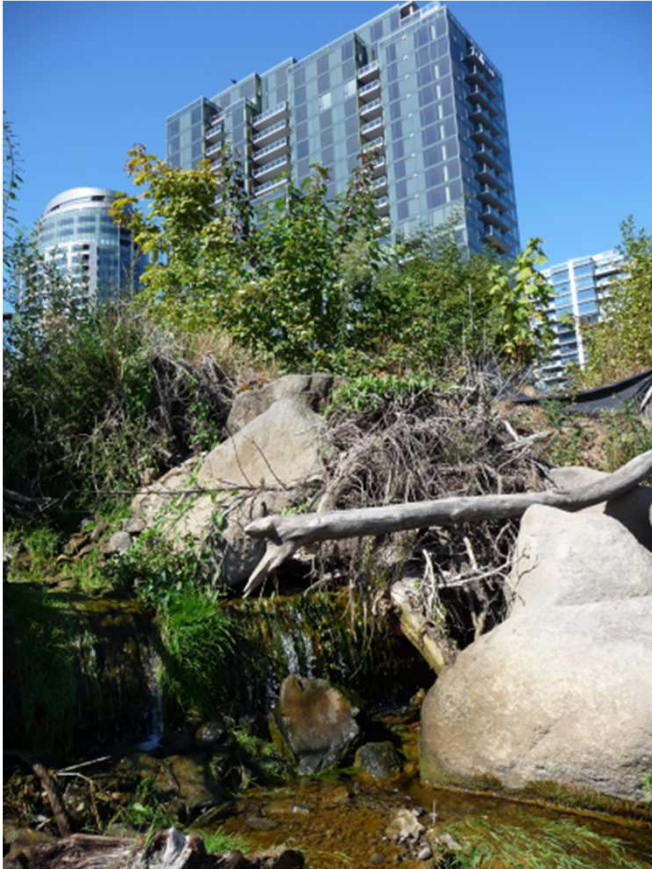
# Sustainability 101

### Portland's South Waterfront Redevelopment 2002





## Portland's South Waterfront Redevelopment 2010





# The Sustainability Value Proposition

The Business Case and Beyond

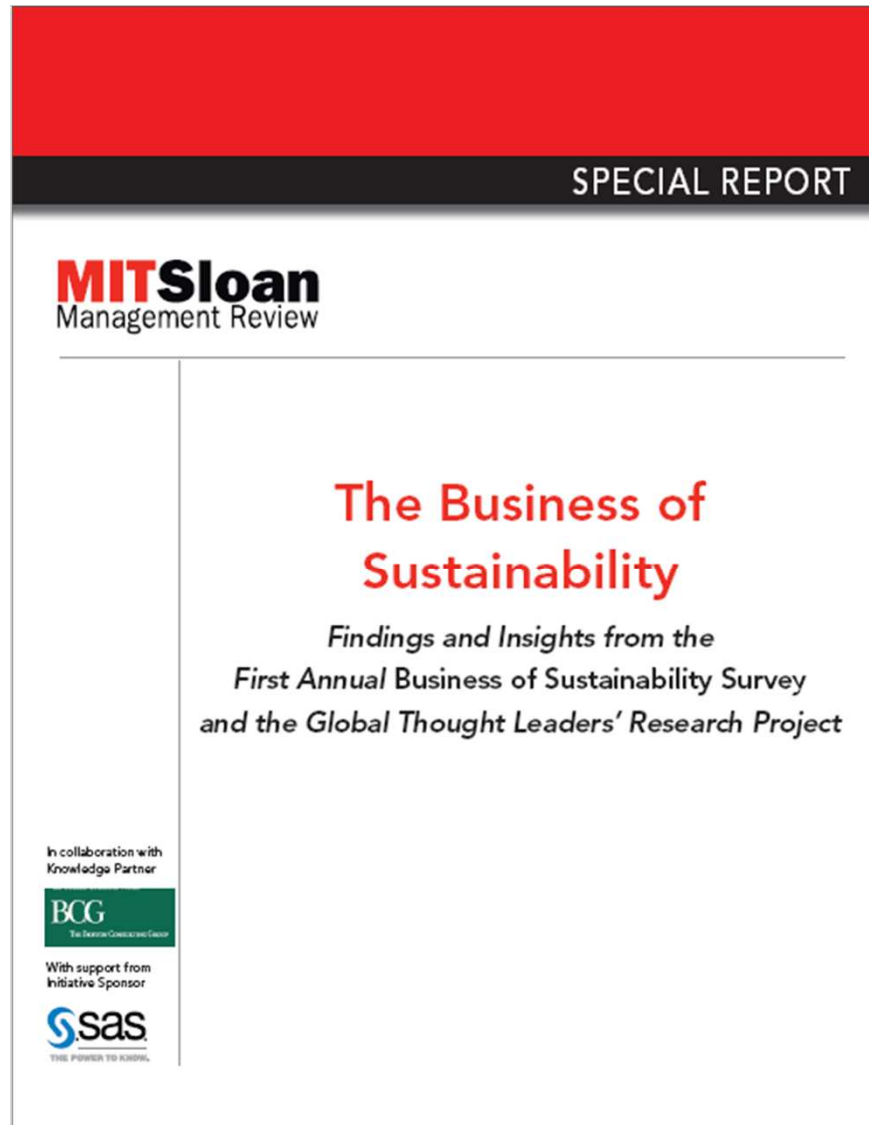
## BREAKOUT EXERCISE

# The Business Case

### INSTRUCTIONS

- ✓ Groups of 4-5
- ✓ Designate a group 'scribe'
- ✓ Make your "most compelling argument" for sustainability
- ✓ Discuss your reactions with each other
- ✓ 25 minutes
- ✓ Then Group "Report Out"

## The Business Case



“more than 70 percent of survey respondents said that their company has not developed a clear business case for sustainability.”

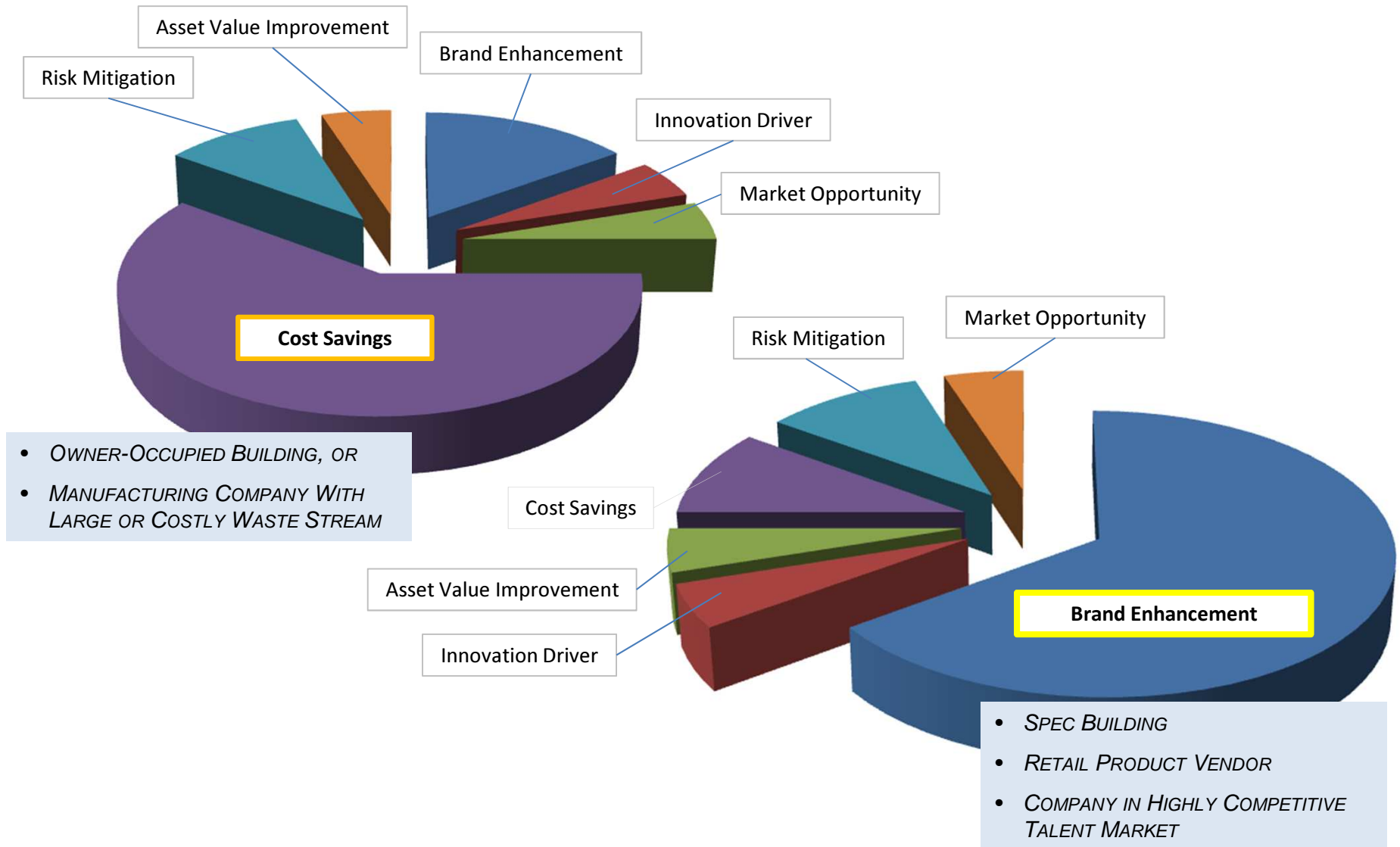
Whereas 50 percent of the experts we surveyed said that their company had a compelling business case for sustainability, only 10 percent of the novices we surveyed did. Further, when asked about the logic underlying their organization’s investments (or lack thereof) in sustainability initiatives, 68 percent of experts cited improved financial returns compared with only 32 percent of novices.

## THE “BUSINESS CASE SIX”

## The Business Case

- |                            |                                  |
|----------------------------|----------------------------------|
| <b>1</b> Cost Savings      | <b>4</b> Market Opportunity      |
| <b>2</b> Risk Mitigation   | <b>5</b> Asset Value Improvement |
| <b>3</b> Innovation Driver | <b>6</b> Brand Enhancement       |

*THE SIX DON'T CHANGE, BUT THEIR RELATIVE IMPORTANCE VARIES*



# The Business Case

## 1 Cost Savings

- |                     |                           |
|---------------------|---------------------------|
| 1 Cost Savings      | 4 Market Opportunity      |
| 2 Risk Mitigation   | 5 Asset Value Improvement |
| 3 Innovation Driver | 6 Brand Enhancement       |



# The Business Case

## 1 Cost Savings



### OHSU

#### CENTER FOR HEALTH AND HEALING

*Portland, Oregon*

**\$140 million construction cost**

**\$2 premium for sustainable features**

- 5 gas-fired microturbines
- massive PV array on S. façade
- membrane bio-reactor, on-site waste treatment
- eco-roof

**\$500k SDC charge offset**

**\$1.3m tax credits (state + federal)**

**\$600,000 annual operating cost savings**

- |                     |                           |
|---------------------|---------------------------|
| ■ Cost Savings      | ■ Market Opportunity      |
| ■ Risk Mitigation   | ■ Asset Value Improvement |
| ■ Innovation Driver | ■ Brand Enhancement       |

# The Business Case

1

Cost Savings

## LEED EBOM™ Economics

Buildings Under 200,000 Square Feet

City	State	SF	Cost	Savings	Payback (Years)	ROI	LEED LEVEL
Sacramento	CA	68,786	\$55,653	\$23,000	2.42	41.33%	Gold
San Francisco	CA	199,487	\$58,004	\$17,540	3.31	30.24%	Silver
Sacramento	CA	75,000	\$121,536	\$19,295	6.30	15.88%	Silver
Rancho Cordova	CA	113,845	\$80,133	\$17,000	4.71	21.00%	Silver
Irvine	CA	50,000	\$132,770	\$50,000	2.66	37.66%	Silver
Rancho Cordova	CA	110,845	\$67,050	\$17,000	3.94	25.35%	Silver
AVERAGES (multiple projects in SF)							
		SF	Cost	Savings	Payback	ROI	
		109,835	\$91,899	\$24,167	3.80	26.03%	

\*Cost includes registration, certification, and consulting fees in addition to required retrofits.

# The Business Case

## 1 Cost Savings



### CLOROX HEADQUARTERS

Oakland, CA

LEED-EBOM Platinum

Square Footage: 547,024

LEED-EBOM Costs: \$412,358

**Annual Net Savings:**  
**\$122,190**

Savings Per Square Foot:  
\$0.22

**Payback: 3.4 years**

**Return on Investment: 30%**



### 425 MARKET STREET

San Francisco, CA

LEED-EBOM Gold Certified

Square Footage: 980,000

LEED-EBOM Costs: \$157,130

**Annual Net Savings: \$105,383**

Savings Per Square Foot: \$0.11

**Payback: 1.5 years**

**Return on Investment: 67%**

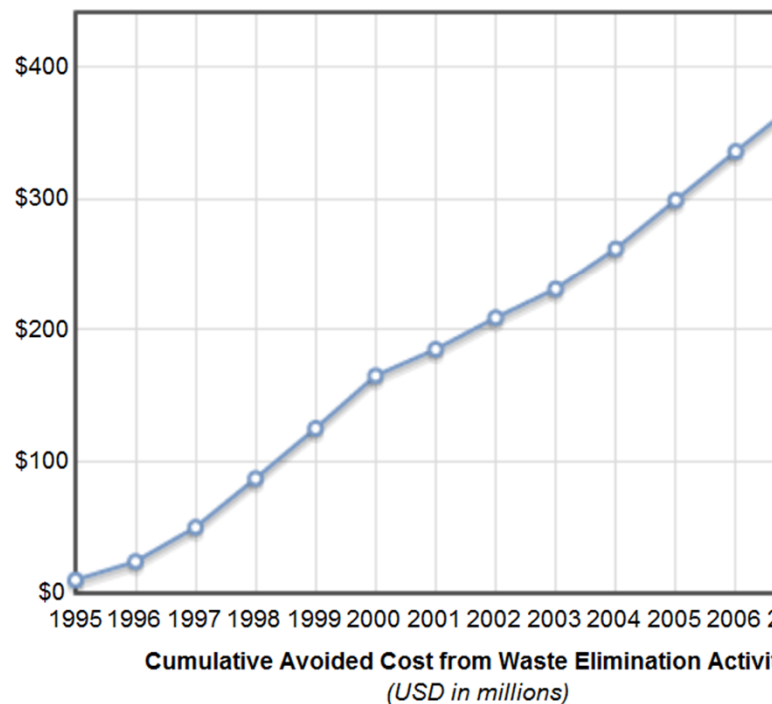
- Cost Savings
- Market Opportunity
- Risk Mitigation
- Asset Value Improvement
- Innovation Driver
- Brand Enhancement

*Interface*

## *Global EcoMetrics*

### 1 Cost Savings

#### *Waste Elimination – Cumulative Avoided Cost*



*“Interface began its journey to sustainability by focusing on the elimination of waste. At Interface, we define waste as anything that does not provide value to the customer. This includes traditional forms of waste such as off-quality and scrap, as well as nontraditional forms of waste such as overuse of materials, inventory losses, etc.*

***The cumulative avoided costs from waste elimination activities since 1995 are calculated to be over \$433 million...”***

source: [www.interfaceglobal.com](http://www.interfaceglobal.com)

- Cost Savings
- Market Opportunity
- Risk Mitigation
- Asset Value Improvement
- Innovation Driver
- Brand Enhancement

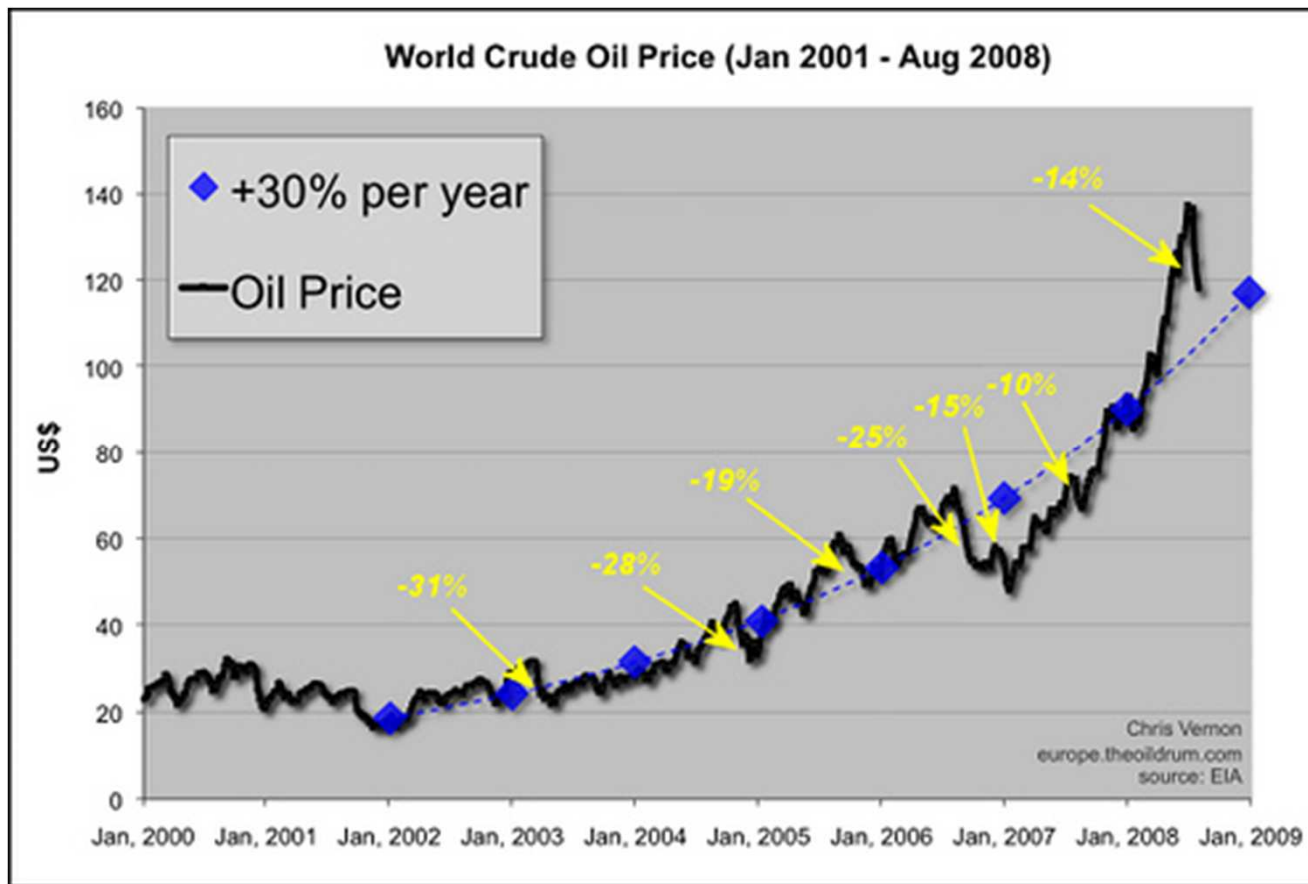
# The Business Case

**2** Risk Mitigation

- 1** Cost Savings
- 2** Risk Mitigation
- 3** Innovation Driver
- 4** Market Opportunity
- 5** Asset Value Improvement
- 6** Brand Enhancement



## 2 Risk Mitigation



- Cost Savings
- Risk Mitigation
- Innovation Driver
- Market Opportunity
- Asset Value Improvement
- Brand Enhancement

## 2 Risk Mitigation

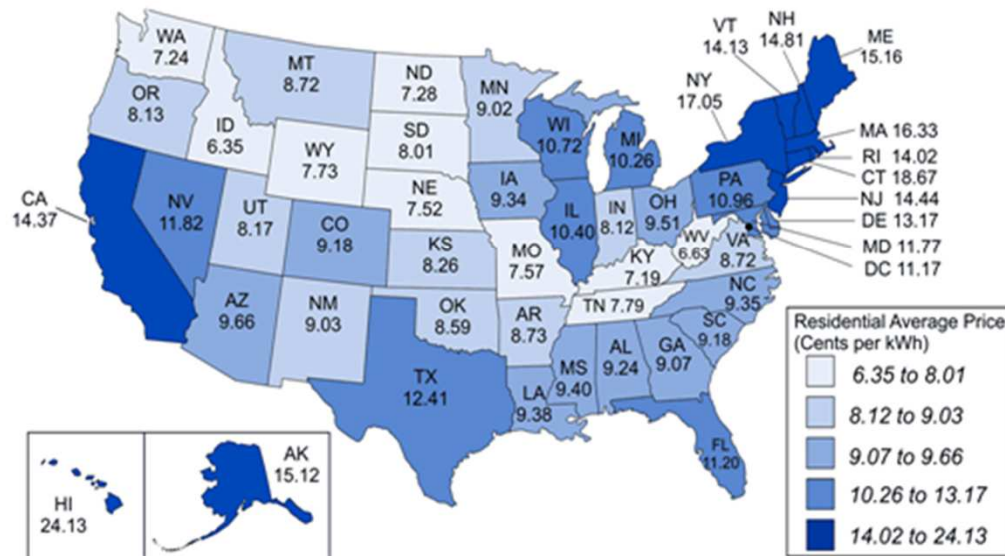
## U.S. National Electricity Price Forecast

Year*	c/kWh
2008E	11.55
2009E	12.09
2010E	12.66
2011E	13.26
2012E	13.88
2013E	14.53
2014E	15.21
2015E	15.93

\*Estimates

- Applying the same conservative 4.7% inflationary rate, average US electricity prices will reach 16 c/kWh by 2015
- Rates in some states will be higher, with CT electricity prices forecast to reach 27 c/kWh in 2015 by the same logic

The U.S. average residential retail price of electricity was 10.64 cents per kilowatthour in 2007.

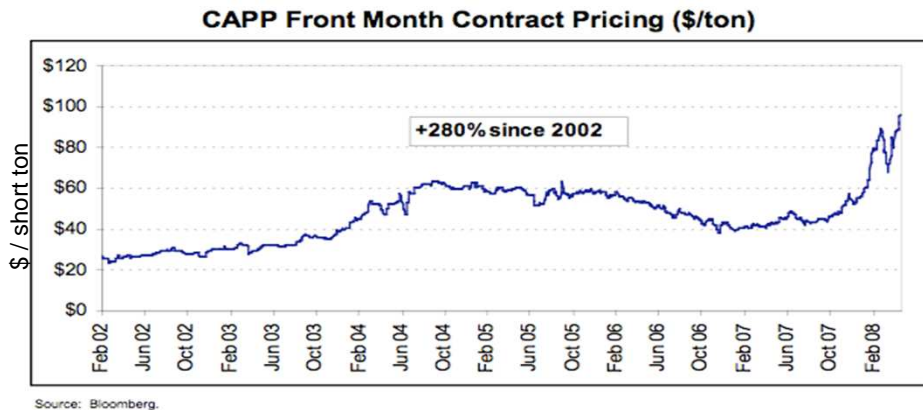


Source: Energy Information Administration, Form EIA-826, "Monthly Electric Sales and Revenue with State"

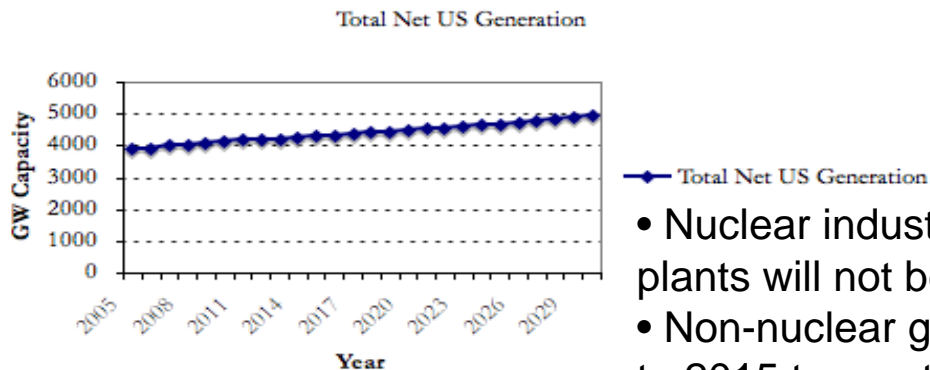
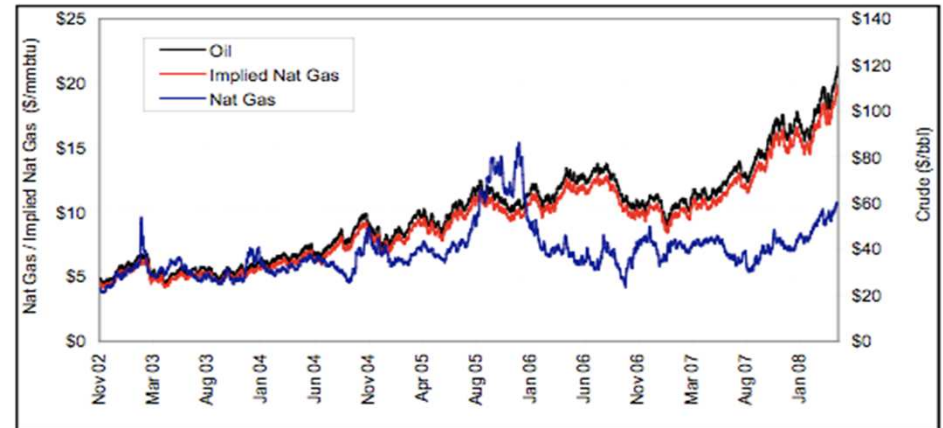
- Cost Savings
- Risk Mitigation
- Innovation Driver
- Market Opportunity
- Asset Value Improvement
- Brand Enhancement

# The Business Case

## 2 Risk Mitigation



- Natural gas prices have more than doubled during the same time period

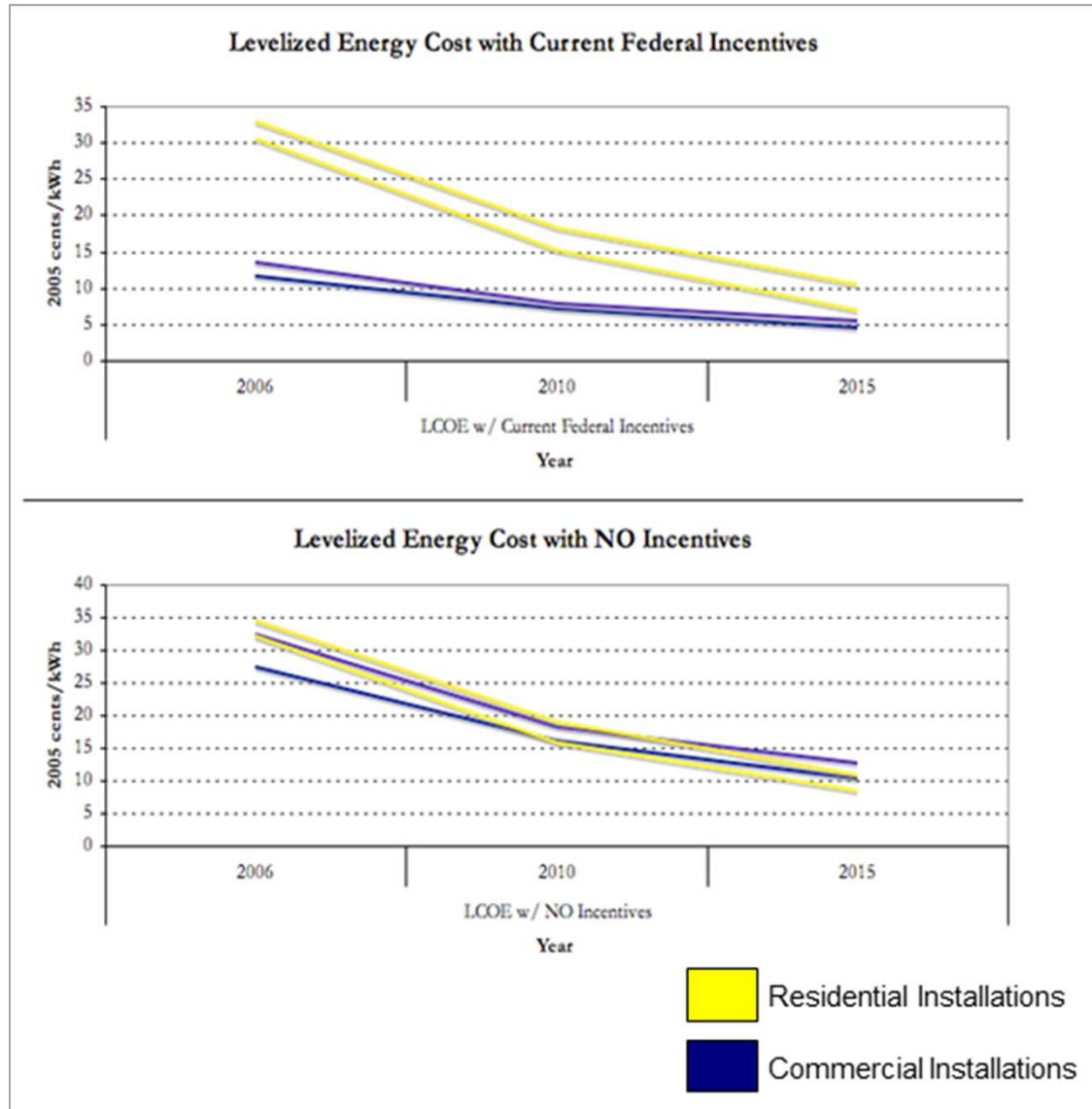


- Nuclear industry groups estimate the next generation nuclear plants will not be online until 2015
- Non-nuclear generation additions of **386 GW** are required prior to 2015 to meet anticipated U.S. electricity demand

Source: COE, Solar Energy Industry Forecast: Perspectives on U.S. Solar Market Trajectory  
[www.eere.energy.gov/solar/solar\\_america/solar@ee.doe.gov](http://www.eere.energy.gov/solar/solar_america/solar@ee.doe.gov)

- Cost Savings
- Risk Mitigation
- Innovation Driver
- Market Opportunity
- Asset Value Improvement
- Brand Enhancement

## 2 Risk Mitigation



Source: COE, Solar Energy Industry Forecast: Perspectives on U.S. Solar Market Trajectory [www.eere.energy.gov/solar/solar\\_america/solar@ee.doe.gov](http://www.eere.energy.gov/solar/solar_america/solar@ee.doe.gov)

- Cost Savings
- Market Opportunity
- Risk Mitigation
- Asset Value Improvement
- Innovation Driver
- Brand Enhancement

# The Business Case

**2** Risk Mitigation

**The New York Times**

January 28, 2010

## S.E.C. Adds Climate Risk to Disclosure


By JOHN M. BRODER

WASHINGTON — The Securities and Exchange Commission said it would warn investors of any serious risks that global warming might pose to a company's business.

**Economist Intelligence Unit** The Economist

### Regulatory risk

Trends and strategies for the CRO



A report from the Economist Intelligence Unit  
Sponsored by:  
ACE Insurance, Cisco Systems, Deutsche Bank, KPMG and IBM

- Cost Savings
- Risk Mitigation
- Innovation Driver
- Market Opportunity
- Asset Value Improvement
- Brand Enhancement



## 2 Risk Mitigation

**“I would be willing to boycott those manufacturers whose products contribute to pollution”**

% who agree or agree strongly, by age, gender and social grade



Source: aVision Research  
Base: 1,200 respondents aged 15+, GB

8664: Graphics

**GREENPEACE**
Greenpeace USA

[Home](#)
[Take action](#)
[Donate](#)
[What we do](#)
[News and Blogs](#)
[Multimedia](#)
[About Us](#)

[Home > Media Center > News Releases >](#)  
Thousands to Protest Exxon/Mobil's Role in Environmental and Human Rights Atrocities

[Send to a friend](#)
[Print this page](#)
[RSS](#)
[Share](#)
0 tweet
[Like](#)

## Thousands to Protest Exxon/Mobil's Role in Environmental and Human Rights Atrocities

- Cost Savings
- Market Opportunity
- Risk Mitigation
- Asset Value Improvement
- Innovation Driver
- Brand Enhancement

# The Business Case

**3** Innovation Driver

- |                            |                                  |
|----------------------------|----------------------------------|
| <b>1</b> Cost Savings      | <b>4</b> Market Opportunity      |
| <b>2</b> Risk Mitigation   | <b>5</b> Asset Value Improvement |
| <b>3</b> Innovation Driver | <b>6</b> Brand Enhancement       |

## Harvard Business Review

www.hbr.org

“In 2005 Cisco designated the recycling group as a business unit, set clear objectives for it, and drew up a notional P&L account. As a result, the reuse of equipment rose from 5% in 2004 to 45% in 2008, and Cisco’s recycling costs fell by 40%.

**“The unit has become a profit center that contributed \$100 million to Cisco’s bottom line in 2008.”** (p.6)

## Why Sustainability Is Now the Key Driver of Innovation

by Ram Nidumolu, C.K. Prahalad, and M.R. Rangaswami

- Cost Savings
- Market Opportunity
- Risk Mitigation
- Asset Value Improvement
- Innovation Driver
- Brand Enhancement

## 3 Innovation Driver



**CFP News** RSS Twitter

**Columbia wins award from Hardwood Forestry Fund**  
Columbia Forest Products was awarded the prestigious Gifford Pinchot award for promoting sustainable forestry...

**Columbia named a 2010 Sustainable Standard-Setter by Rainforest Alliance:** Recognizing businesses with commitments to

Site contents ©2005-2010 Columbia Forest Products, Inc., All Rights Reserved. Terms & Conditions Site Map

- Cost Savings
- Market Opportunity
- Risk Mitigation
- Asset Value Improvement
- Innovation Driver
- Brand Enhancement

# The Business Case

## 4 Market Opportunity

- |                     |                             |
|---------------------|-----------------------------|
| 1 Cost Savings      | 4 <b>Market Opportunity</b> |
| 2 Risk Mitigation   | 5 Asset Value Improvement   |
| 3 Innovation Driver | 6 Brand Enhancement         |

## 4 Market Opportunity



### Los Angeles Mandates LEED For New Buildings

April 2008

A new, aggressive ordinance  
building standards, part of

News

= REQUIREMENT IN MANY MUNICIPALITIES

### San Francisco Approves Tough Green Building Standard

For **commercial buildings and high-rise residential buildings**, the ordinance adds in requirements from the U.S. Green Building Council's LEED (**Leadership in Energy and Environmental Design**) rating system:

- Starting in 2010, they must include documentation to achieve LEED Silver certification (or 75 GreenPoints). A number of specific LEED standards must also be met for landscaping, water use reduction, and construction debris management;


The toughest requirements apply to **large commercial buildings**:

- For new large commercial interiors and major alterations to existing buildings, new permit applications must include documentation to achieve the same LEED rating requirements as for new large commercial buildings, and must also meet the LEED standards for materials that emit low levels of indoor pollutants.

- Cost Savings
- Risk Mitigation
- Innovation Driver
- Market Opportunity
- Asset Value Improvement
- Brand Enhancement



## 4 Market Opportunity



**EPP Home**  
Basic Information  
Federal EPP Efforts  
Policy & Guidance  
Products & Services  
Hands-On Tools  
Publications  
Information for Vendors  
Frequent Questions  
Related Links

**U.S. ENVIRONMENTAL PROTECTION AGENCY**

## Environmentally Preferable Purchasing (EPP)


[Contact Us](#)   **Search:** ☐ All EPA ☒ This Area

You are here: [EPA Home](#) » [Office of Chemical Safety & Pollution Prevention](#) » [Pollution Prevention](#) » [Environmentally Preferable Purchasing](#)


Environmentally Preferable Purchasing (EPP) helps the federal government "buy green," and in doing so, uses the federal government's enormous buying power to stimulate market demand for green products and services. Geared first to help federal purchasers, this site can help green vendors, businesses large and small -- and consumers. Use the easy index to:

- Find and evaluate information about green products and services;
- Identify federal green buying requirements;
- Calculate the costs and benefits of purchasing choices;
- Manage green purchasing processes.

Sections of the site most useful to consumers include: finding and evaluating green products and services; tools and related links.




- |                     |                           |
|---------------------|---------------------------|
| ■ Cost Savings      | ■ Market Opportunity      |
| ■ Risk Mitigation   | ■ Asset Value Improvement |
| ■ Innovation Driver | ■ Brand Enhancement       |



▼ Environmental Investment Initiatives

- [AIM Environmental Technology Program](#)
- [Corporate Governance Environmental Strategy](#)
- [CalPERS Public Market Environmental Managers](#)
- [Real Estate Environmental Strategies](#)
- [CalPERS Expansion Project](#)
- [Environmental Investment Information Resources](#)

- International Corporate Governance Network (ICGN) Conference
- Investment Proposals
- Equity Brokerage Questionnaire
- CalPERS Assets
- Investment Policies
- CalPERS Risk Management System
- Corporate Governance Website



MEMBERS | EMPLOYERS | BUSINESS PARTNERS | CalPERS INVESTMENTS | ABOUT CalPERS

[CalPERS Investments](#) > **Environmental Investment Initiatives**

### Environmental Investment Initiatives

We have a strong track record of mobilizing financial capital in new and innovative ways, consistent with the highest fiduciary standards. We are just starting to explore ways in which it can marry the jet stream of finance and the capital markets with public purpose. Our goals are to achieve positive financial returns, while fostering energy savings, sustainable growth and sound environmental practices.

Learn about CalPERS investment initiatives by asset class below.

**[AIM Environmental Technology Program](#)**

CalPERS \$600 million Environmental Technology Program Board targets investments in environmental technology solutions that are more efficient and less polluting than existing technologies. The program focuses on recycling; minimizing the use of natural resources; reducing greenhouse gas emissions, refuse, and contamination to the environment. The primary objective of the Program is to achieve positive financial returns over the long-term and help catalyze the development of environmental and clean technologies to address these challenges. [Learn more here.](#)

**[Corporate Governance Environmental Strategy](#)**

CalPERS Board has adopted a plan to share information about environmental liabilities, and improve transparency of environmental impacts. Under the plan, CalPERS will disclose a number of initiatives aimed at improving environmental data transparency. [Read more about the strategy here.](#)

[CalPERS Public Market Environmental Managers](#)

▼ What's New

- Investment News

▼ Shortcuts

- External Managers
- Investment Policies
- Annual Reports

**[AIM Environmental Technology Program](#)**  
 CalPERS \$600 million Environmental Technology Program Board targets investments in environmental technology solutions that are more efficient and less polluting than existing technologies...

- Cost Savings
- Market Opportunity
- Risk Mitigation
- Asset Value Improvement
- Innovation Driver
- Brand Enhancement

- |                            |   |
|----------------------------|---|
| <b>1</b> Cost Savings      | <b>4</b> Market Opportunity             |
| <b>2</b> Risk Mitigation   | <b>5</b> <b>Asset Value Improvement</b> |
| <b>3</b> Innovation Driver | <b>6</b> Brand Enhancement              |

## THE COSTAR STUDY

The Journal of  
Sustainable Real Estate

5 Asset Value Improvement

» Call For Papers
» What Others Are Saying
» Does Green Pay Off?
» Industry Perspectives
» Advisory Board
» Editorial Board
» The Journal Archives

### Does Green Still Pay Off?

**Author:** Norm Miller  
**Date:** June 2010  
**Comments:** [Norm Miller](#)

**Introduction:**  
In one of the earlier office property studies authored with Andy Florance and Jay Spivey entitled "Does Green Pay Off?" comparing green buildings, defined as either Energy Star labeled or LEED certified at any level, published in the *Journal of Real Estate Portfolio Management*, Vol. 14, No. 4, Oct-Dec. 2008 we found strong evidence of both significant rental premiums but also faster absorption and lower cap rates/higher prices per square foot. Since that date we have noted a flurry of buildings planned in the 2004 to 2006 period but delivered since late 2007 which have become LEED certified.1 Much of the Class A construction for new office buildings has been aimed at becoming LEED certified and in some markets, like San Francisco, it is a requirement. The timing could not have been worse for those coming on line in 2008 and 2009 and we have seen this have an impact on the latest statistics making apples to apples comparisons more challenging. Our findings and those of several academic studies suggested significant rental premiums and significant sales prices premiums.

■ [View Does Green Still Pay Off? \(pdf\)](#)

### Does Green Pay Off?

**Authors:** Norm Miller, Jay Spivey and Andy Florance  
**Date:** July 2008  
**Comments:** [Norm Miller](#)

**Introduction:**  
In this study and call for further research we provide some comparison data on energy star and LEED certified buildings versus non-

- Cost Savings
- Risk Mitigation
- Innovation Driver
- Market Opportunity
- Asset Value Improvement
- Brand Enhancement



## THE CoSTAR STUDY

## 5 Asset Value Improvement

## Testing Results In Hedonic Model



Sales price per square foot as the dependent variable the following model was tested:

$$\text{Sales Price/Sq Ft} = \alpha + \beta_1(\text{Age}) + \beta_2(\text{ES}) + \beta_3(\text{LEED}) + \beta_4(\text{Size}) + \beta_5(\text{CBD}) + \beta_6(\text{Yr dummy}) + \beta_7(\text{City Dummy}) + \varepsilon$$

Where  $\alpha$  is the constant,  $\beta$  is the regression coefficient for each variable and  $\varepsilon$  is the error or residual term.

T-Stat

R SQ =	.478	Intercept =	201.39		11.03***	
Adj R SQ =	.468	Age =	-4.66		-11.88***	
			12.99		1.41*	
				1.49*		
					.835	
					8.52***	
					18.59***	
					17.87***	
					17.52***	
					17.10***	
					17.98***	
					18.17***	
					13.31***	
					21.70***	
					11.22***	
					19.19***	

## Summary

- Green buildings achieve higher rents
- Green buildings achieve higher occupancy
- Green buildings have lower operating costs
- Green buildings achieve higher prices per square foot



- Cost Savings
- Risk Mitigation
- Innovation Driver
- Market Opportunity
- Asset Value Improvement
- Brand Enhancement

# The Business Case

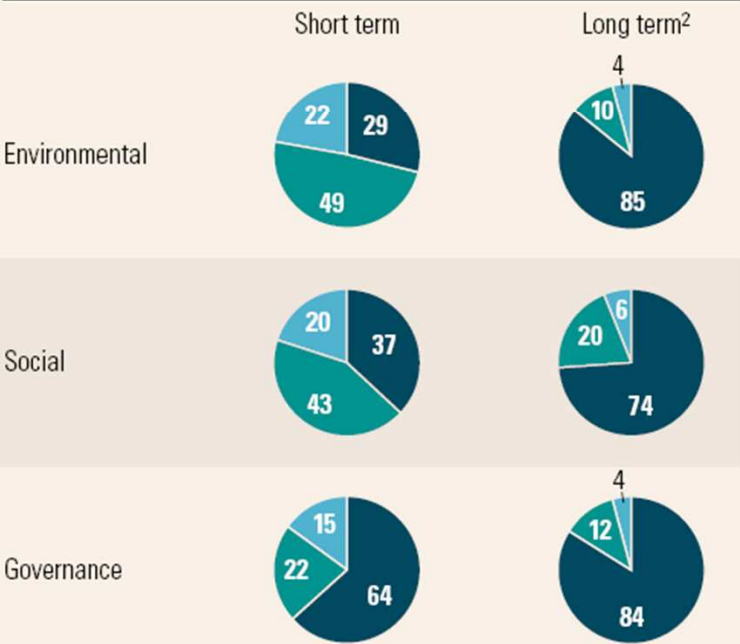
Exhibit 5

## Long-term contribution to shareholder value

% of respondents,<sup>1</sup> n = 150

- Substantially positive/positive
- Neutral/can't evaluate
- Negative/substantially negative

### Contribution of given program to shareholder value



<sup>1</sup>Figures may not sum to 100%, because of rounding.  
<sup>2</sup>Respondents who answered “don’t know” are not shown.

5 Asset Value Improvement

- Cost Savings
- Risk Mitigation
- Innovation Driver
- Market Opportunity
- Asset Value Improvement
- Brand Enhancement



## Sustainability and the Dynamics of Green Building

Piet Eichholtz  
Maastricht University  
Netherlands

p.eichholtz@maastrichtuniversity.nl

Nils Kok  
Maastricht University  
Netherlands

n.kok@maastrichtuniversity.nl

John M. Quigley  
University of California  
Berkeley, CA

quigley@econ.berkeley.edu

### Abstract

Research on climate change suggests that small improvements in the “sustainability” of buildings can have large effects on greenhouse gas emissions and on energy efficiency in the economy. We analyze the dynamics of green building and the private returns to the recent surge in investments in energy-efficient office buildings. We examine a comprehensive panel of “green” office buildings and nearby controls first observed in 2007, estimating changes in the economic premium for energy efficiency between 2007 (when green office space was 7 percent of the national inventory and unemployment rates were 4.6 percent) and 2009 (when green space was 14.9 percent of

■ Cost Savings   ■ Market Opportunity  
■ Risk Mitigation   ■ Asset Value Improvement  
■ Innovation Driver   ■ Brand Enhancement

- |                            |                                  |
|----------------------------|----------------------------------|
| <b>1</b> Cost Savings      | <b>4</b> Market Opportunity      |
| <b>2</b> Risk Mitigation   | <b>5</b> Asset Value Improvement |
| <b>3</b> Innovation Driver | <b>6</b> Brand Enhancement       |

## “EXTERNAL” BRAND

# The Business Case

## 6 Brand Enhancement

The image shows two screenshots of corporate sustainability websites. The top screenshot is from Walmart's Corporate Sustainability page. It features a blue header with the Walmart logo and 'Corporate' text. A navigation bar includes links for Home, About Us, Press Room, and Health & Safety. A sidebar on the left lists 'Events', 'Global Sustainability Report', 'Sustainability Index', and 'Sustainable Value Networks'. The main content area is titled 'Sustainability' and includes a section 'Our Commitments' with the text: 'Delivering on ecomagination takes innovation, investment and action.' Below this, it states: 'At Walmart, we know that being an efficient and profitable business and being a good steward of the environment are goals that can work together. Our broad environmental goals at Walmart are simple and straightforward:' followed by a bulleted list: 'To be supplied 100 percent by renewable energy;', 'To create zero waste;', and 'To sell products that sustain people and the environment.' The bottom screenshot is from Dow's Sustainability page. It features the Dow logo and a navigation bar with links for PRODUCTS AND SERVICES, INVESTOR RELATIONS, OUR COMPANY, NEWS CENTER, SUSTAINABILITY, INNOVATION, and CAREERS. The main content area is titled 'Dow Sustainability' and includes the text: 'Sustainability requires making every decision with the future in mind. It is our relationship with the world around us - creating economic prosperity and social value while contributing to the preservation of our planet.' A legend at the bottom right of the image maps colors to business case categories: Blue for Cost Savings, Red for Risk Mitigation, Orange for Innovation Driver, Teal for Market Opportunity, Green for Asset Value Improvement, and Purple for Brand Enhancement.

Walmart Corporate

Home About Us Press Room Health & Safety

Home > Sustainability

Events

Global Sustainability Report

Sustainability Index

Sustainable Value Networks

Sustainability

Our Commitments

Delivering on ecomagination takes innovation, investment and action.

At Walmart, we know that being an efficient and profitable business and being a good steward of the environment are goals that can work together. Our broad environmental goals at Walmart are simple and straightforward:

- To be supplied 100 percent by renewable energy;
- To create zero waste;
- To sell products that sustain people and the environment.

umerous awards, which would not be possible without the support around the world.

Dow Sustainability

Sustainability requires making every decision with the future in mind. It is our relationship with the world around us - creating economic prosperity and social value while contributing to the preservation of our planet.

Cost Savings Risk Mitigation Innovation Driver Market Opportunity Asset Value Improvement Brand Enhancement

## “EXTERNAL” BRAND

### 6 Brand Enhancement

The screenshot shows the Environmental Leader website. At the top left is the logo "environmental LEADER" with the tagline "Energy & Environmental News for Business". To the right is a green banner with the text "Read: Biobased Chemicals and Products: A New Driver for Green Jobs" and a link "Visit: bio.org/ind/green\_workforce.asp". Below the banner is a navigation bar with links: Home, News, Columns, Videos, Charts, Jobs, EL Research, White Papers, and Webinars. Underneath is a "Popular Topics" section with links to Energy Efficiency, Emissions, Data Centers, Facilities, Carbon Finance, Sustainability, and Webinars. The main article is dated "October 18, 2007" and titled "Two-Thirds Of People Will Pay Premium For Green Products". Below the title is a social sharing bar with icons for Share, Facebook, Twitter, LinkedIn, and Print, along with links for "Email This Post" and "Add your comments". The article text begins with "Nearly nine out of 10 consumers worldwide said they would switch to energy providers that offer products and services that help reduce the level of greenhouse gas emissions, according to a study on climate change released today by Accenture." The Accenture logo is displayed on the left side of the article text.

- Cost Savings
- Market Opportunity
- Risk Mitigation
- Asset Value Improvement
- Innovation Driver
- Brand Enhancement

## “INTERNAL” BRAND

# The Business Case

### 6 Brand Enhancement

To sustain high levels of performance  
Requires high levels of well-being  
- *Peter Senge*

## "INTERNAL" BRAND

## 6 Brand Enhancement

## 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 Value	\$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

- Cost Savings
- Risk Mitigation
- Innovation Driver
- Market Opportunity
- Asset Value Improvement
- Brand Enhancement

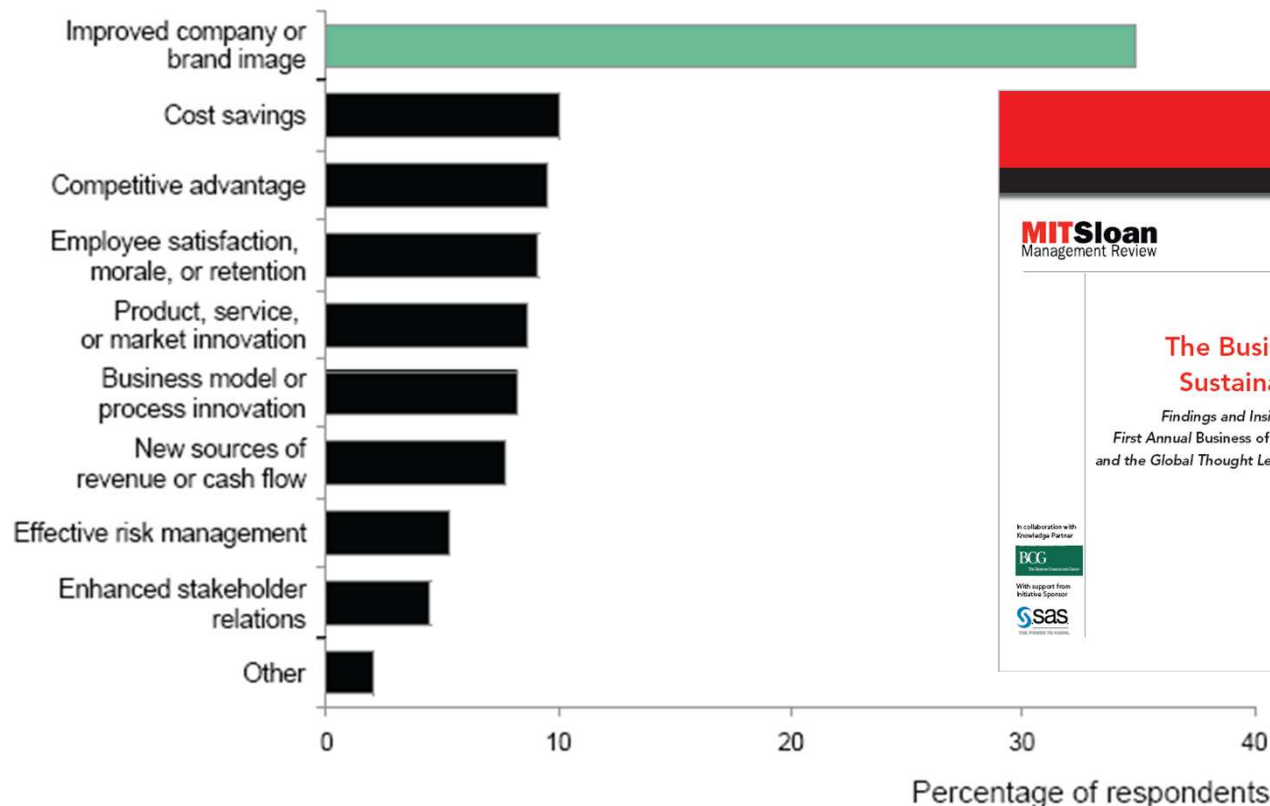


“INTERNAL” BRAND

# The Business Case

6 Brand Enhancement

*What are the greatest benefits to your organization in addressing sustainability issues?*



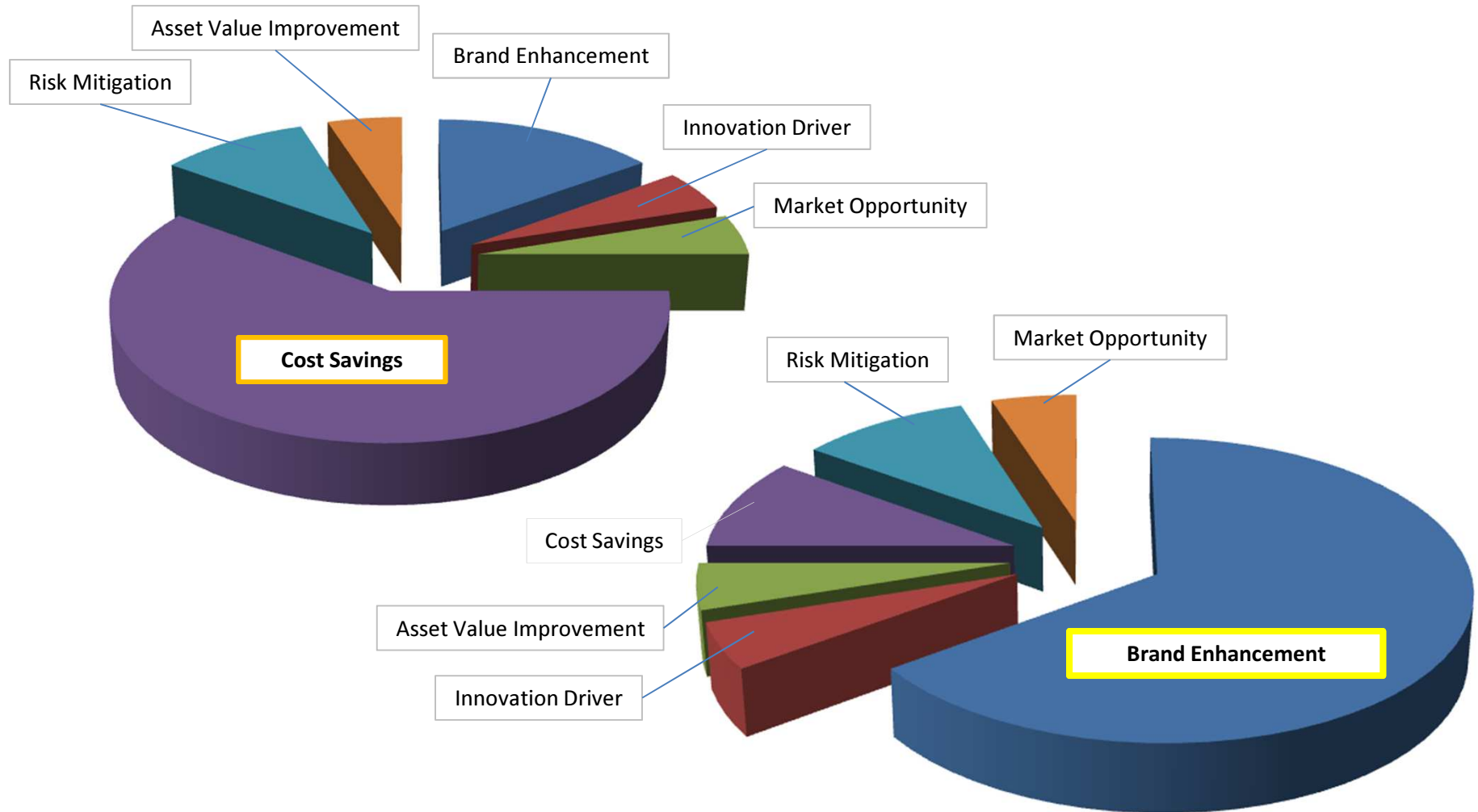
Note: Data reflect the top-ranked response from the 1,560 business leaders who participated in our survey.



Respondents Cited—by a Large Margin—an Improved Image as the Principal Benefit of Addressing Sustainability

- Cost Savings
- Market Opportunity
- Risk Mitigation
- Asset Value Improvement
- Innovation Driver
- Brand Enhancement

*THE SIX DON'T CHANGE, BUT THEIR RELATIVE IMPORTANCE VARIES*



# Beyond the Business Case

Q.: How Do People Make Decisions?

**FASTCOMPANY.COM**

Where ideas and people meet

- ❖ **Positive change motivators (opportunity) are much more powerful than negative ones (fear).** i.e. business opportunity, competitive advantage, helping save the earth, etc. are better messages than “if we don’t do this bad things will happen”.
- ❖ **Sometimes large, dramatic change is easier to implement than incremental change** because incremental change just doesn’t get enough attention in the fray of competing priorities, while dramatic change leads to big shifts in priorities, resource allocation, etc.

Q.: How Do People Make Decisions?

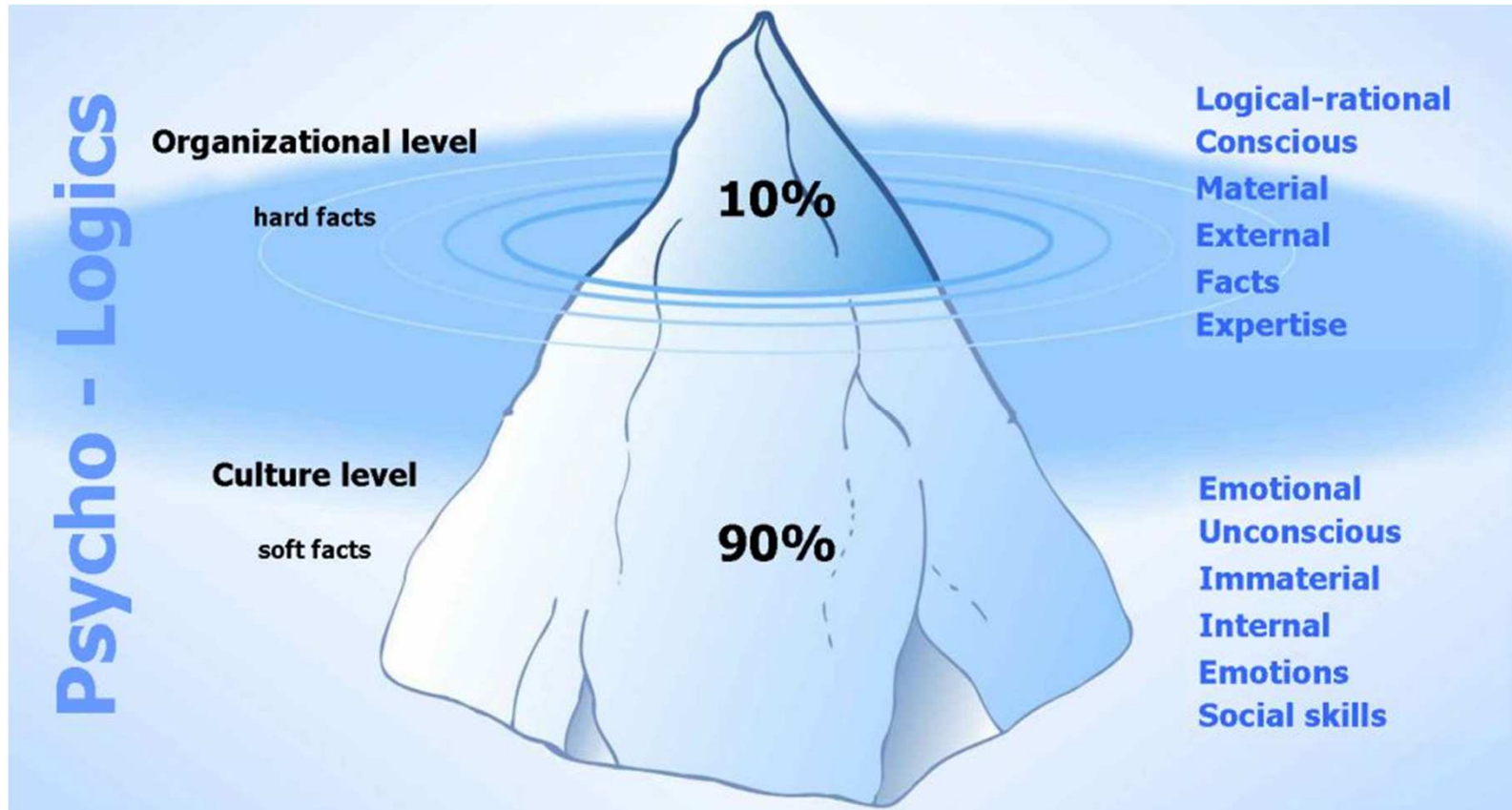
*The McKinsey Quarterly*

Conventional change management emphasizes the importance of reinforcing and embedding desired changes in structures, processes, systems, target setting, and incentives.

We agree with this, and it is core to our work. But, to be effective, these mechanisms must take into account that people don't always behave rationally. In fact, they most often don't behave rationally – they are motivated by emotion (positively and negatively).

## Q.: How Do People Make Decisions?

## Beyond the Business Case





### Q.: How Do People Make Decisions?

#### *The McKinsey Quarterly*

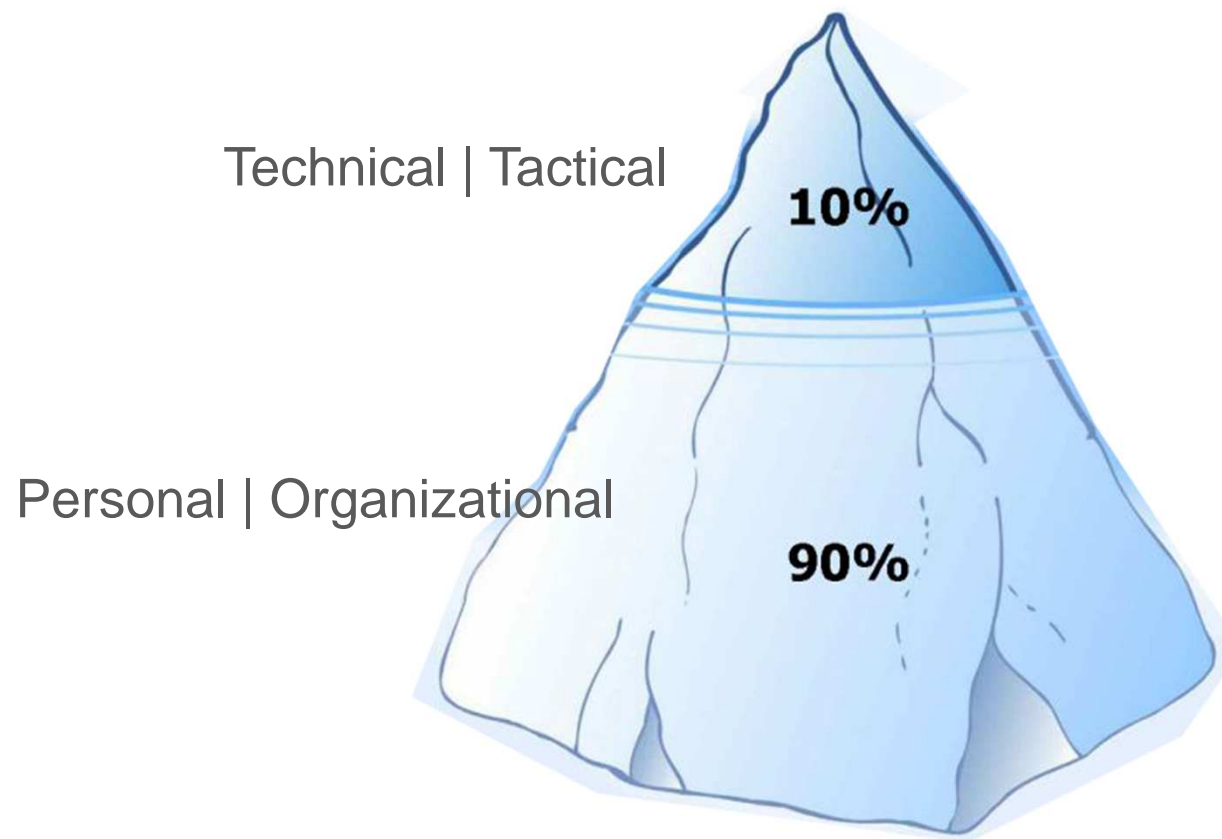
When managers and employees are asked what motivates them the most in their work they are equally split among five forms of impact—

1. impact on society (for instance, building the community and stewarding resources),
2. impact on the customer (for example, providing superior service),
3. impact on the company and its shareholders,
4. impact on the working team (for example, creating a caring environment), and
5. impact on “me” personally (my development, paycheck, and bonus).

“Change leaders need to be able to tell a change story that covers all five things that motivate employees. In doing so, they can unleash tremendous amounts of energy that would otherwise remain latent in the organization.”

## Where is the LEVERAGE?

## Beyond the Business Case





## 2010 tied for warmest year as walruses flee ice melt

Wed, Sep 15 2010

By [Deborah Zabarenko](#), Environment Correspondent

WASHINGTON (Reuters) - So far, 2010 is tied for the warmest year on record, and Arctic sea ice reached its third-lowest level, prompting thousands of walruses to haul themselves out of ice-starved waters, U.S. scientists said on Wednesday.

The first eight months of the year match the record set for the same period in 1998 for the highest combined land and ocean surface temperatures worldwide, at 58.5 degrees F (14.7 C), 1.21 degrees F (0.67 degrees C) above the 20th century average, the U.S. National Climatic Data Center said in a statement.

Temperatures for the northern hemisphere summer -- June through August -- were the second-warmest globally, after 1998, the center said.

## Global Ecological Crises

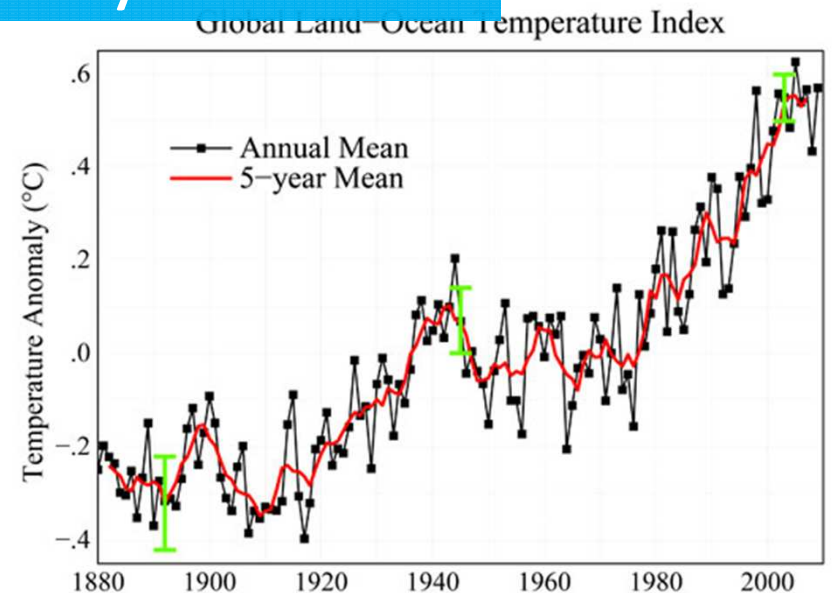
The Ethical Case =

“We CAN make a difference,  
therefore we MUST try”

“...2009 was tied for the warmest year in the modern record, a new NASA analysis of global surface temperature data shows.”

...in the Southern Hemisphere, 2009 was the warmest year since modern records began in 1880.

...when we average temperature over five or ten years to minimize that variability, we find that global warming is continuing unabated,” said James Hansen, the director of GISS



# The Sustainability Value Proposition

=

The Business Case

+

The Ethical Case

### ARTICLES

**MIT Slone Rerport : The Business of Sustianability**

[www.mitsmr-ezine.com/busofsustainability/2009](http://www.mitsmr-ezine.com/busofsustainability/2009)

**CoStar Report: Value of Green Building**

[www.costar.com/josre/doesGreenPayOff.htm](http://www.costar.com/josre/doesGreenPayOff.htm)

**HRB: Sustainability as A Key Driver of Innovation**

[hbr.org/2009/09/why-sustainability-is-now-the-key-driver-of-innovation/ar/1](http://hbr.org/2009/09/why-sustainability-is-now-the-key-driver-of-innovation/ar/1)

**McKinsey, Irrational Side of Change Management**

NEED LINK !!!

**Fast Company, Change or Die:**

[www.fastcompany.com/node/52717/print](http://www.fastcompany.com/node/52717/print)

### SUSTAINABILITY FRAMEWORKS

**General Sustainability**

[en.wikipedia.org/wiki/Sustainability](http://en.wikipedia.org/wiki/Sustainability)

**Triple Bottom Line**

[en.wikipedia.org/wiki/Triple\\_bottom\\_line](http://en.wikipedia.org/wiki/Triple_bottom_line)

**Cradle to Cradle**

[www.mcdonough.com/cradle\\_to\\_cradle.htm](http://www.mcdonough.com/cradle_to_cradle.htm)

**The Natural Step**

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



Questions/Comments?

Thank You

Scott Lewis

Brightworks  
[www.brightworks.net](http://www.brightworks.net)