

# Natural Capitalism Solutions

ELDORADO SPRINGS, COLORADO



ENTREPRENEURING THE SOLUTIONS  
KEY TO COMPETITIVENESS AND PROSPERITY

# Global Drivers of Change

- 
- Loss of ecosystem services
  - Carbon constrained world
  - Population/ demographics
    - High energy prices
    - Vulnerabilities
    - Chindia
  - The sustainability imperative

Survival  
demands  
innovation in  
products,  
processes and  
our whole  
mental model



A time in which  
corporations,

governments



and civil society



must all reinvent themselves



There is no longer any serious scientific doubt that every major ecosystem in the world is in decline

## UN Millennium Ecosystem Assessment

1,360 experts in 95 nations, said a rising human population had **polluted or over-exploited two-thirds of the ecological systems on which life depends**

"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**"

UN Secretary-General Kofi Annan said : "human activities are causing environmental damage on a massive scale throughout the world...**the very basis for life on earth is declining at an alarming rate.**"

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

# Ray Anderson



What is the business case for ending life on earth?

# New Rule

If we insist on ruining the planet,  
we have to stop claiming we're  
a “superior species”.



Presidential Climate Action Project

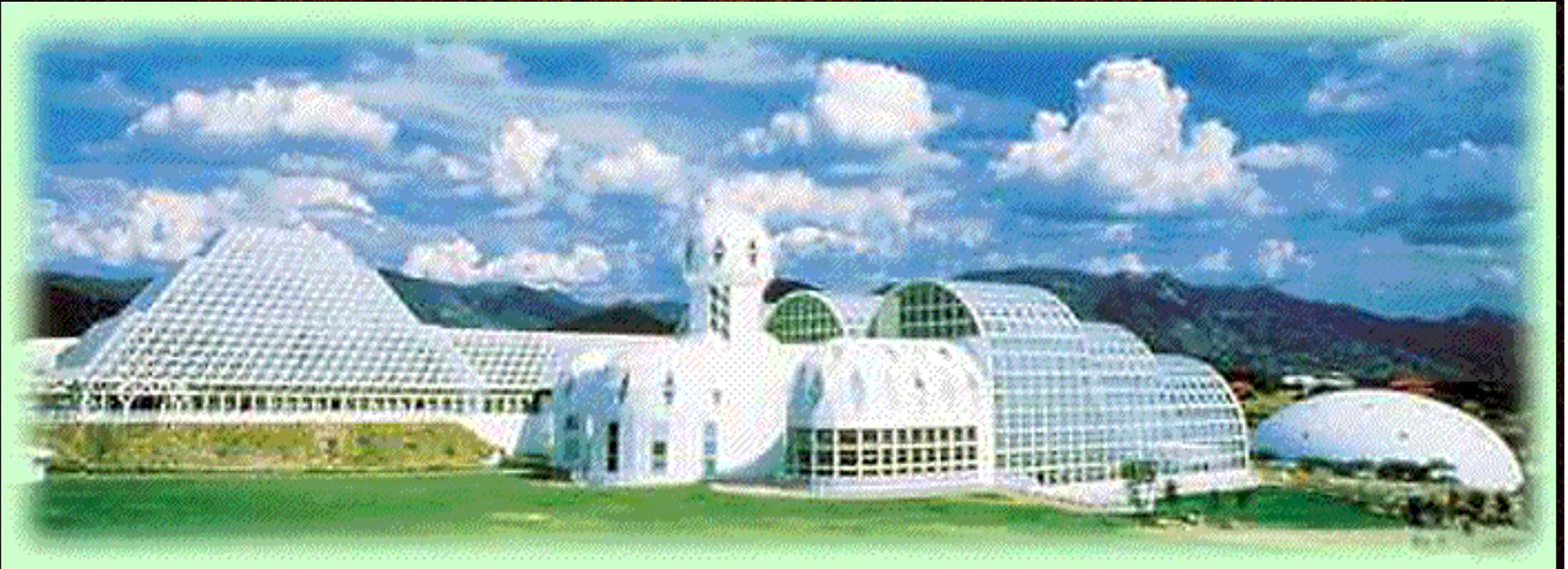
# Ecosystem Services

what an intact ecosystem gives to our economy



- ◆ Climate regulation
- ◆ Incubation of new life (e.g. fish habitat)
- ◆ Nutrient cycling
- ◆ Water and air purification
- ◆ Waste management
- ◆ Erosion control
- ◆ Pest control
- ◆ Temperature moderation
- ◆ Noise reduction
- ◆ Economical landscaping
- ◆ Storm-water retention
- ◆ Tourist attractions

# Biosphere II



\$200,000,000

Climate  
change is for  
real



1928



2004

SPECIAL REPORT GLOBAL WARMING

**TIME**

BE  
WORRIED.  
BE **VERY**  
WORRIED.

Climate change isn't some vague future problem. It's already happening, and it's already affecting you, your kids, and your job.

DATE OF THE TIPPING POINT  
HOW IT CHANGES YOUR BEACH  
HOW TO LIVE IN A WORLD THAT'S  
SAFER FOR YOU—AND THE REST OF  
THE CLIMATE CHANGING

Hurricane Katrina



*Positive proof of global warming.*



18th  
Century

1900-

1950

1970

1980

1990

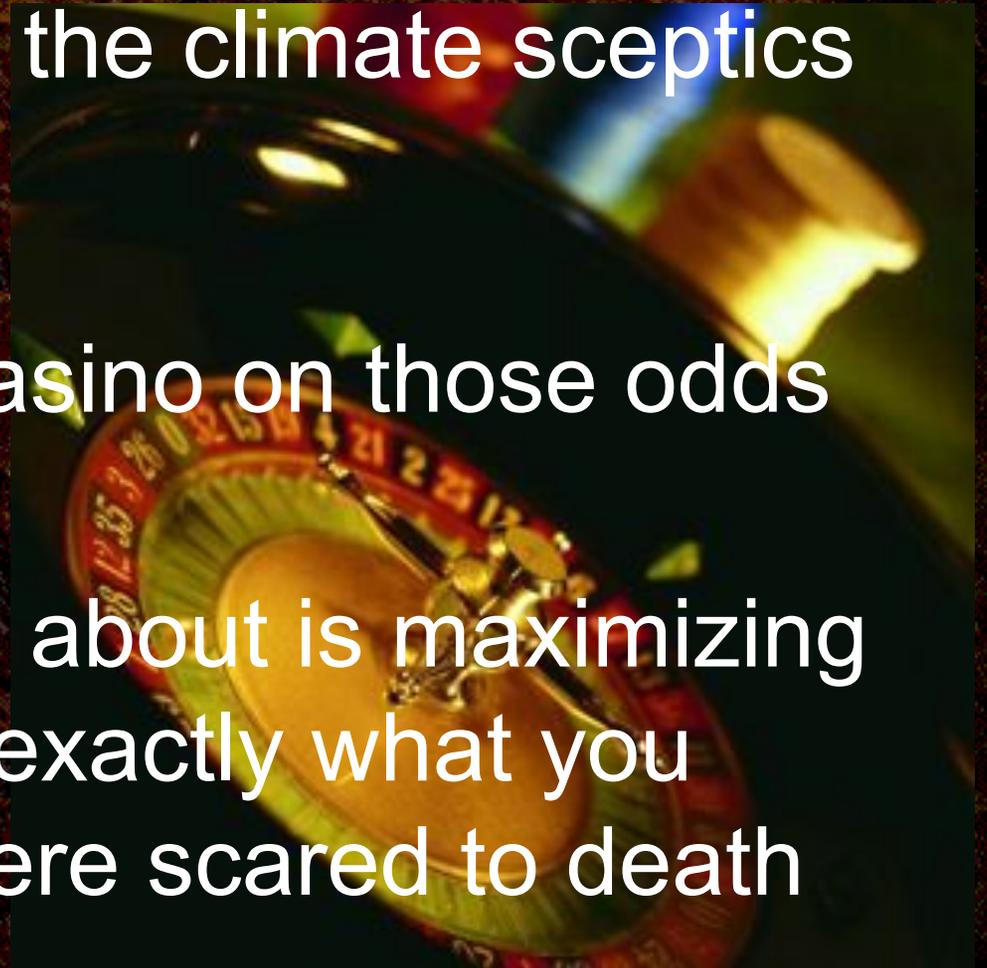
2006

The science does not matter

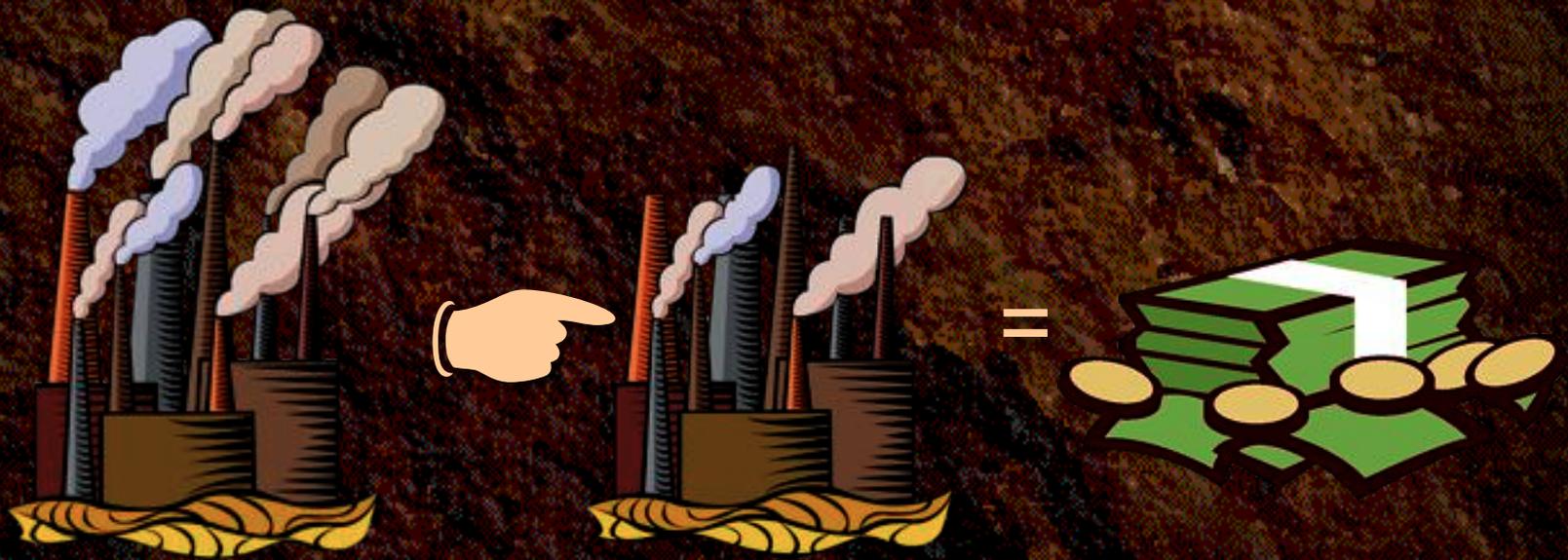
Let's assume that the climate sceptics are right.

Don't go to the casino on those odds

If all that you care about is maximizing profit, you will do exactly what you would do if you were scared to death about climate



Protecting the climate is profitable



# DuPont's Goals



Cut greenhouse gas emissions 65% 1990–2010

Raise revenues 6%/y 2000–10 with no increase in energy use

By 2010, 10% of energy & 25% of feed stocks from renewables

Since 1990 have kept energy use the same and increased production 30%

GHGs from global operations are down 67%

Global energy use 9% below 1990 levels

Savings of \$3 billion over 12 year

On track with renewables

# ST Micro-electronics' Goals



Zero net CO<sub>2</sub>  
emissions by 2010

40-fold increase in  
production over 1990

Commitment to this  
goal has taken the  
company from the #12  
chipmaker to the #6

Set 2010 goal of  
15% renewable energy  
55% cogeneration and  
30% conventional

Won 04 Best Industrial  
Renewable Energy  
Partnership from EU

When ST is climate neutral,  
it will have saved \$900  
million

## The financial community is concerned

Swiss Re:

If your company does not take its carbon footprint seriously, maybe our company does not want to insure you.... Or your officers and directors

JPMorgan Chase:

asking clients that are large emitters of greenhouse gases to develop reduction plans, following similar commitments by Citigroup Inc. and Bank of America Corp.

# The Carbon Disclosure Project

Institutional investors -  
\$41 trillion assets

Pushing FT top 1,800  
companies to  
disclose “investment-  
related”  
GHG emissions



# May 2006

GE \$(135 billion in annual revenue) will spend \$1.5 billion a year to research conservation, pollution and reducing the emission of greenhouse gases.

Joining Immelt were executives from American Electric Power, Boeing and Cinergy, and World Resources Institute.

"We believe we can help improve the environment and make money doing it," GE Chairman Jeffrey Immelt



[www.ge.com/ecomagination/](http://www.ge.com/ecomagination/)

## May 2007

Sales of GE's Ecomagination products: wind turbines, water-purification systems and energy-efficient appliances doubled to \$12bn over the past two years, has back orders for \$50 billion more, and will "blow away" the original goal of \$20 billion by 2010. Overall sales at GE grew just over 20 per cent to \$163bn.

GE reduced greenhouse gas emissions by 4% in 2006, ahead of its target of 1% cent before 2012.

June 2006 - AB 32:

"The debate is over. The science is in. The time to act is now. Global warming is a serious issue facing the world. We can protect our environment and leave California a better place without harming our economy."

Arnold Schwarzenegger

Feb 2007

California, Oregon, New Mexico, Arizona and Washington state jointly announce similar plans to reduce "greenhouse gases" through a "cap-and-trade" program.

New England states and New York have adopted a similar, regional approach.

New Mexico joined Chicago Climate Exchange.



# Chicago Climate Exchange

330+ members include:



American Electric Power, DuPont

6 cities, 3 counties, 1 state, Alcoa, IBM



Makes a market for reducing direct emissions & creating offsets

Includes all 6 GHGs

Facilitates carbon price risk mgmt

Requires carbon reductions by members

# The action is now at the local, campus, state and corporate level

Over 670 cities have signed the Seattle call to abide by Kyoto

University Presidents' Initiative - launched by ASHEE over 100 University Presidents have signed led by ASU:

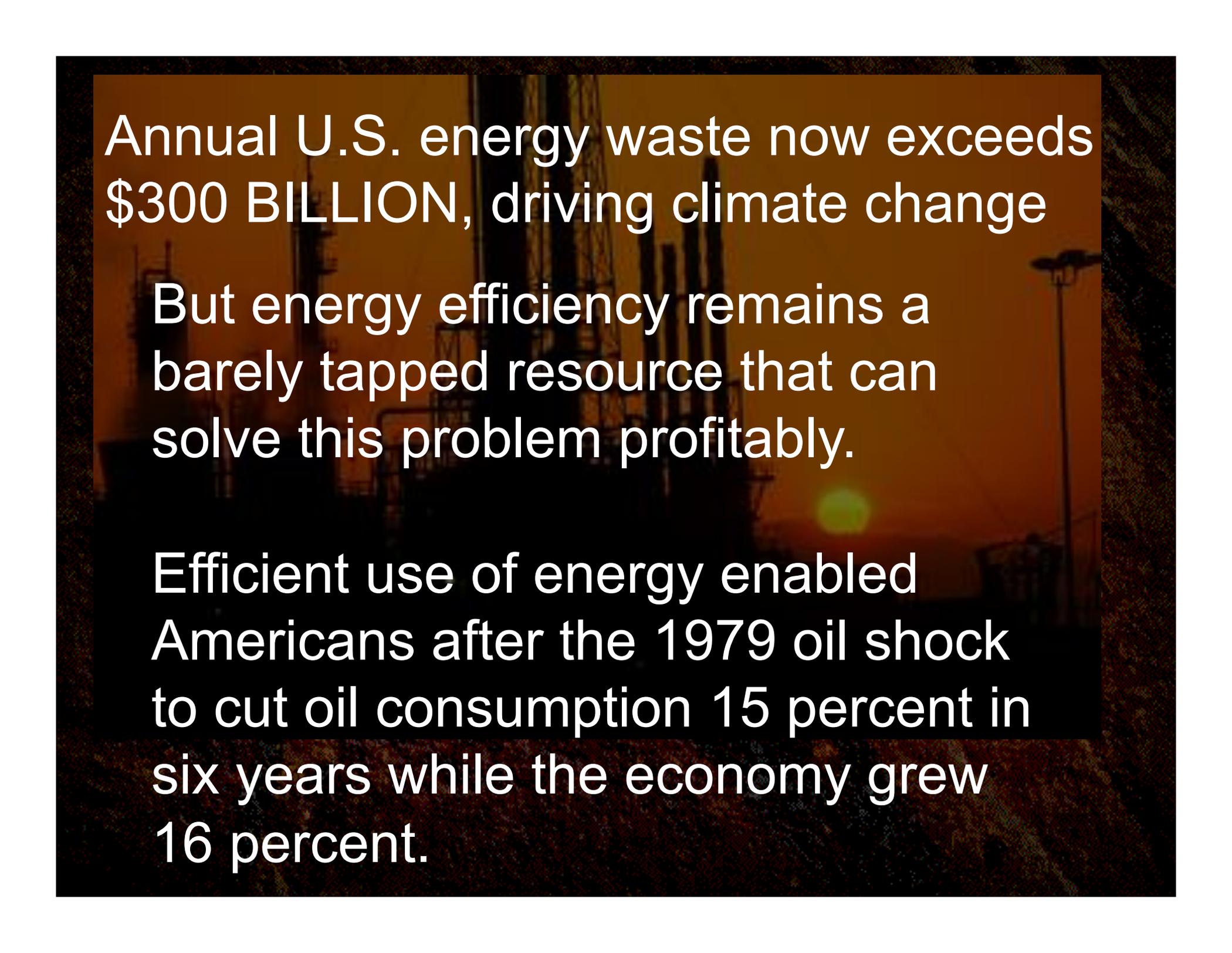
200 University presidents to pledge to make their campuses climate neutral

Focus the Nation.org

The Business Case for Climate Protection

Hundreds of companies implementing greenhouse gas emissions reduction programs

AB 32 - the Tipping Point

The background of the slide is a photograph of an industrial facility, possibly a refinery or chemical plant, during sunset. The sky is a mix of orange and red, with a bright sun low on the horizon. Silhouettes of tall distillation columns and other industrial structures are visible against the bright sky. A street lamp is visible on the right side of the image.

Annual U.S. energy waste now exceeds \$300 BILLION, driving climate change

But energy efficiency remains a barely tapped resource that can solve this problem profitably.

Efficient use of energy enabled Americans after the 1979 oil shock to cut oil consumption 15 percent in six years while the economy grew 16 percent.

A typical community spends more than 20 percent of its gross income on energy—and 80 percent of those dollars immediately leave the local area.



# Energy efficiency in Osage

Instead of a power plant, the utility implemented efficiency programs that:

- ✓ save \$1 million/year - average home owners save almost \$200 a year in energy bills; many local businesses save much more
- ✓ Reduced electric bills to 1/2 the state average
- ✓ Gives Osage unemployment that is half the national average



# What's A Community to Do?

- Panick!



How do you implement a  
climate protection program  
in your town?

[www.natcapsolutions.org/](http://www.natcapsolutions.org/ClimateProtectionManual.htm)  
[ClimateProtectionManual.htm](http://www.natcapsolutions.org/ClimateProtectionManual.htm)

# Recognizing: 710 Mayors signed The Mayors Climate Protection Agreement

QuickTime™ and a  
TIFF (Uncompressed) decompressor  
are needed to see this picture.

"We see this as an important opportunity for Gaithersburg to become a leader in climate protection."

-- *Mayor Sidney A. Katz, Gaithersburg, MD*

"We have accomplished much but it's time to do more in our city."

- *Dennis R. Walaker, Fargo, ND*

"No city is too small!"

-- *Mayor Gary A. Burger, Turtle River, MN*



"The consequences of us not acting affirmatively are enormous."  
-- *Mayor Ernest D. Davis, Mt. Vernon, NY*

"The City of Sebastopol has committed to a 30% reduction of its greenhouse gas emissions between 2000 and 2008."

-- *Mayor Larry Robinson, Sebastopol, CA*

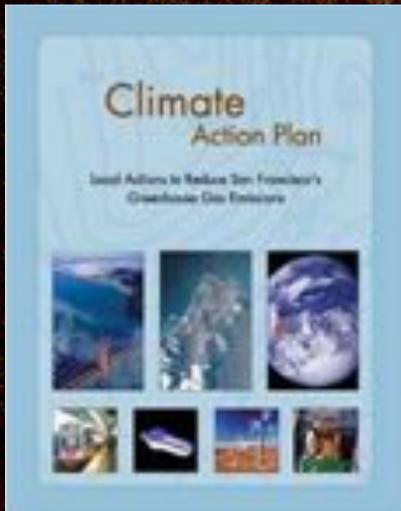
# Setting Goals

## Emissions Reduction

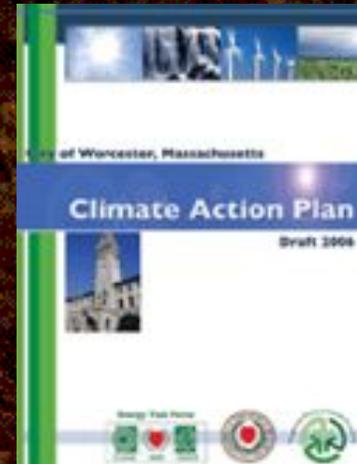
- Salt Lake City—Achieved in 2005
  - Reduce 12% below 2001 baseline by 2011
- Burlington, Vermont
  - 10% below 2000 emissions by 2010
- Berkeley, CA
  - 15% below projected emissions for 2010
- Portland, OR
  - 10% below 1990 levels by 2010
- Ottawa, Canada
  - 20% below 1990 levels
    - 2007 for corporate business activities
    - 2012 for community



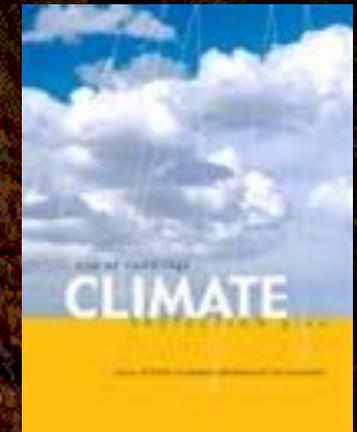
# Creating Plans Climate Action Plans



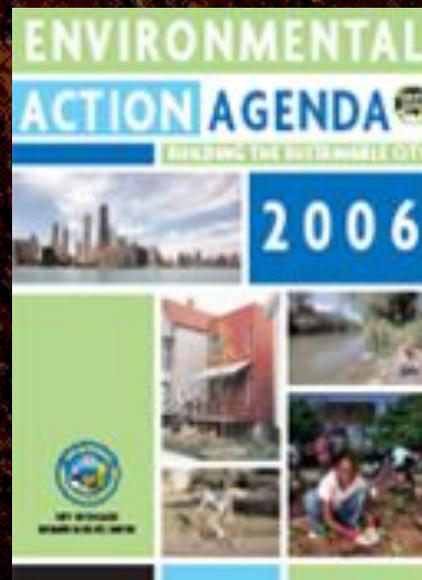
San Francisco, CA



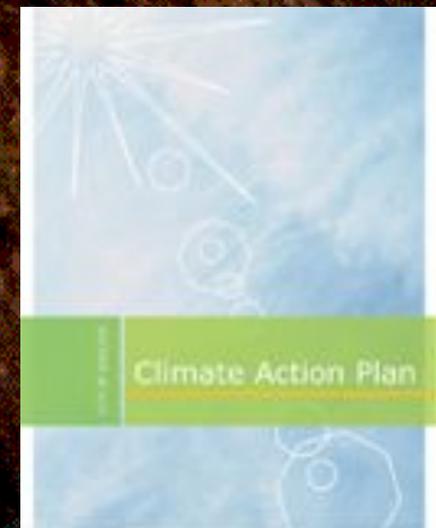
Worcester, MA



Cambridge, MA



Chicago, IL



Boulder, CO

# Implementing Best Practices

- Municipal operations
  - Retrofit city buildings
  - Set LEED Gold std
  - LED street lighting
  - Support idle reduction policies
  - Plug-in hybrid programs
  - Use alternative fuels
  - Establish green purchasing policies
  - Neighborhood solar utilities
- Community wide
  - Provide incentives for builders to provide higher energy efficiency buildings
  - Provide lower-income weatherization assistance
  - Smart metering, price signals and price structuring
  - Provide better access to public transportation

# Berkeley, CA - LED Traffic Lights

Replaced nearly 3,000 traffic signals with LED fixtures

Estimated savings

563,000 kWh = \$56,000

Actual Savings

- 890,000 kWh = \$89,000
- Reduced maintenance costs
- 323 metric tons of CO<sub>2</sub>



# Scottsdale, AZ

## Building Standards

First U.S. city to adopt a LEED Gold standard for all new and renovated city buildings--March 22, 2005

2006 Scottsdale Senior Center first LEED Gold building

- Green features cost 2% more
- Use ~50% less energy
- Expect 5 year simple payback
- Features:
  - Solar panels
  - Natural lighting
  - Efficient heating and cooling system
  - Super insulated roof

# San Francisco, CA - Biodiesel

2006 - Mayor Newsom signed an Executive Directive to increase biodiesel use:

- All diesel-using departments (total of 8 million gallons diesel/year) are required to use biodiesel with the following targets
  - 25% B20 by March 31, 2007
  - 100% B20 by December 31, 2007



# Radnor Township, PA

## Green Power Purchasing

- 30,000 residents approved resolution
- Purchased wind energy for 62% of electricity needs = 1.4 million kWh
- Offsetting added costs through energy savings from LED installations and other measures



# Flower Mound, TX

## Incentives for Energy Efficient Buildings

- Green Building Program offers free advertising, referrals, certification emblem
- Businesses must use 30 BMP from town approved list:
  - LEED certified
  - Must submit a waste reuse, recycling and reduction plan
  - 25% more efficient than International Energy Conservation Codes



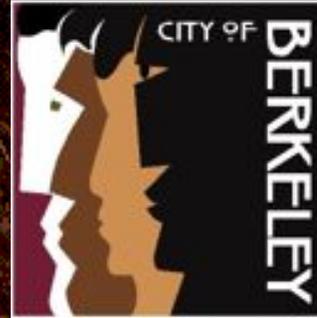
# Ferndale, MI

## Fuel Efficient Vehicle Incentives

- Local Ordinance passed providing free parking at city meters for drivers of cars with 30+ miles/gallon
- Started May 2006



**October 23, 2007  
Berkeley Breakthrough on  
Financing Solar Energy  
and Energy Efficiency**



**Berkeley, CA – Berkeley is set to become the first city in the nation to allow property owners to pay for energy efficiency improvements and solar system installation as a long-term assessment on their individual property tax bill.**

**TIMELINE**

October 23: Berkeley, California, press release

October 30: State Attorney General & Treasurer to work for statewide version

November 1: US DoE pledges support

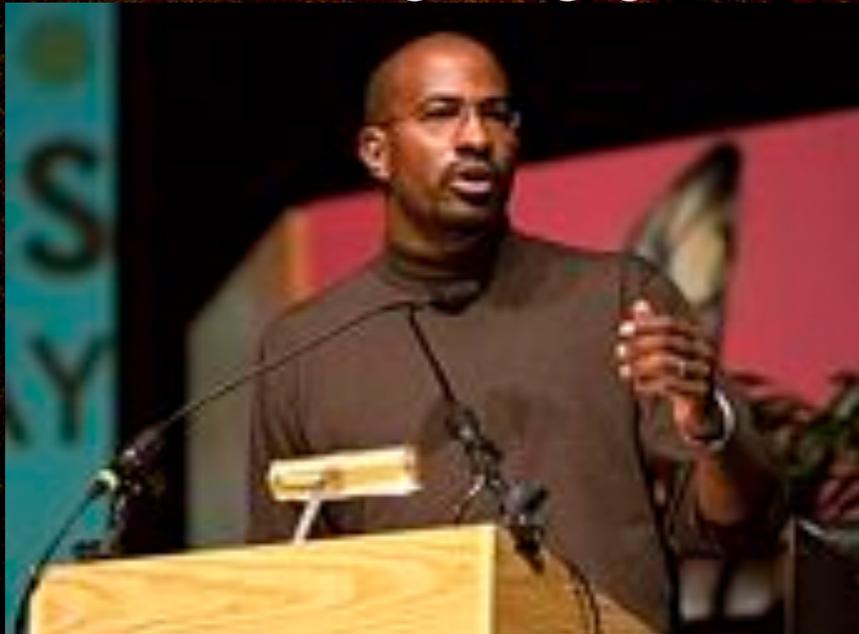
June 2008: operational date



# Green Collar Jobs

Renewables and energy efficiency give ten times the number of jobs of investing in coal or nuclear plants.

The industries now generate 8.5 million green collar jobs and \$1 trillion in revenue. By 2030 such jobs could increase to 40 million and \$4.5 trillion in revenues - giving good work to 1 in 4 Americans.



# Economic Realities:

The Energy Trust of Oregon has shown that saving energy strengthens the entire economy

Table 9: Economic Impacts per Average Megawatt Savings

| Economic Impact Measure | Impact per aMW Saved |
|-------------------------|----------------------|
| Output                  | \$2,230,572          |
| Wages                   | \$684,536            |
| Business Income         | \$125,882            |
| Jobs                    | 22                   |

Source: Calculated by ECONorthwest using 2002 Energy Trust spending and energy savings impacts.

# Batinovich Plan

CA Public Utility Commission rewarded utilities with 15% of savings they created by implementing efficiency. Utilities projected no need to build any more power plants. All projected that they would meet future demand through renewable generation.

PG & E, country's biggest private utility, spent \$150 million in 1991 to make customers more efficient. Its 15% of the savings added \$40 - \$50 million to PG&E's bottom line and saved its customers nine times that much.

The PUC found that between 1990 – 93 such efficiency measures saved customers a net present value of almost \$2 billion. Unfortunately “free market advocates” overturned this program.

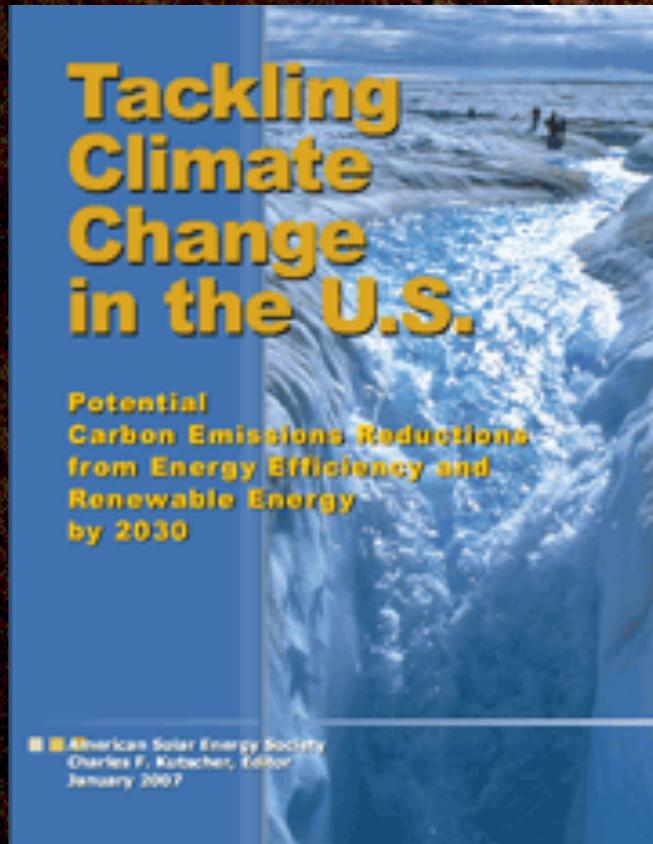
# Unleash the New Energy Economy



Climate change represents a unique challenge for economics: it is the greatest and widest-ranging market failure ever seen. – Sir Nicholas Stern

Creating the low-carbon economy will lead to the greatest economic boom in the U.S. since we mobilized for World War II – Former President Bill Clinton

# Unleash the New Energy Economy



Shows how to reduce U.S. carbon emission 80% below 1990 levels by Mid - century using energy efficiency and renewable energy

[www.ases.org/climatechange/main.html](http://www.ases.org/climatechange/main.html)

# First we shape the built environment, then it shapes us

Most of us spend 90% of our lives inside of buildings



## Built Environment

- 36% of total energy use
- 65% of electricity consumption
- 30 - 60% of green house gas emissions
- 30% of waste output
- 30% of raw materials use
- 12% of potable water consumption

***Indoor air quality can be two to five times worse than outdoor air***

# State-of-the-shelf

Technologies can make old buildings  
3X to 4X more efficient  
— new buildings 10X.



# Harvard Business Review

## “Building the Green Way”

“In fact the owners of standard building face massive obsolescence. They must act now to protect their investments

“Building owners are starting to do reviews of their portfolios to see how green their buildings are and what they need to do to meet growing market demand.”

# Daylighting Study

Pacific Gas & Electric

Students in daylit schools progress  
20–26% faster on test scores

Retail sales are  
40% higher in daylit stores

# Green buildings improve labor productivity and worker health

Improving indoor air quality could save U.S. businesses

- \$58 billion in avoided sick time each year,
- Another \$200 billion earned in increased worker performance.

Fisk, "Health and Productivity Gains from Better Indoor Environments" in The Role of Emerging Energy-Efficient Technology in Promoting Workplace Productivity and Health, Lawrence Berkeley National Laboratory, February 2002.

# Combine energy efficiency and renewable energy

- Sacramento California - shut down 1,000 MW power plant, invested instead in efficiency, wind, solar, co-generation. This:

- ✓ Increased regional income by \$130 million.
- ✓ Had the plant kept running rates would have increased 80%. Kept rates same for decade,
- ✓ This retained over 2,000 jobs, created 880 new jobs
- ✓ The program eliminated the utility's debt



# Net Zero Energy Homes



# San Francisco PUC building

- Urban turbines on roof
- PV's on roof and in windows
- Net zero building if wind blowing
- Water efficiency measures
- The most energy efficient office building developed in an urban setting in the United States



# Four Times Square, NYC (Condé-Nast Building)

- 150,000 m<sup>2</sup>; 47 storeys
- non-toxic, low-energy materials
- 50% energy savings/m<sup>2</sup> despite doubled ventilation rates
- Fuel cells
- Integral PV in spandrels on S & W elevations
- Ultrareliable power helped recruit premium tenants at premium rents
- Market average construction cost



The U.S. at night.



Source: EPRI-website satellite image, 10 August 1996...

35 seconds later, an Oregon power line sagged into a tree.



Source: EPRI-website satellite image, 10 August 1996...

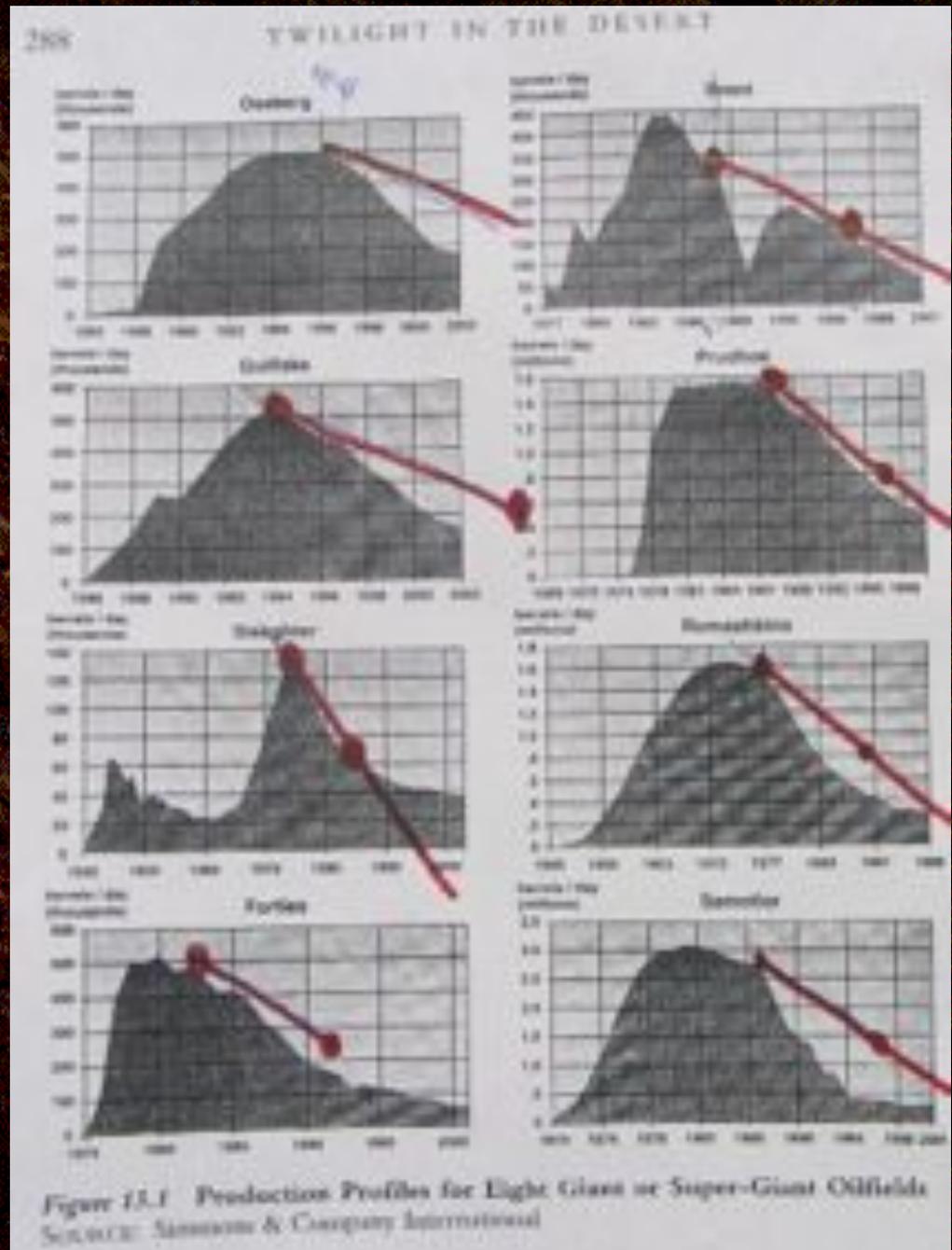
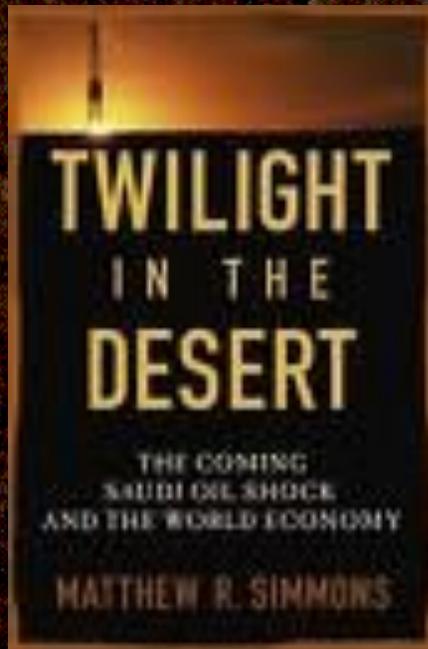
A few box cutters  
and intense  
commitment  
forever shattered  
the complacency  
of the world.



Every  
centralized  
Infrastructure  
system is just  
as vulnerable



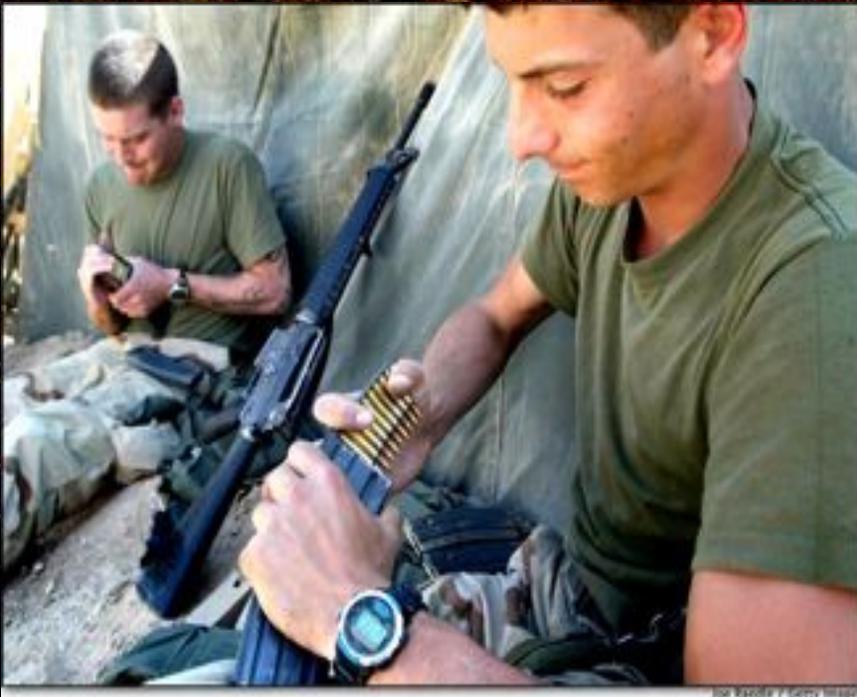
# Matthew Simmons:



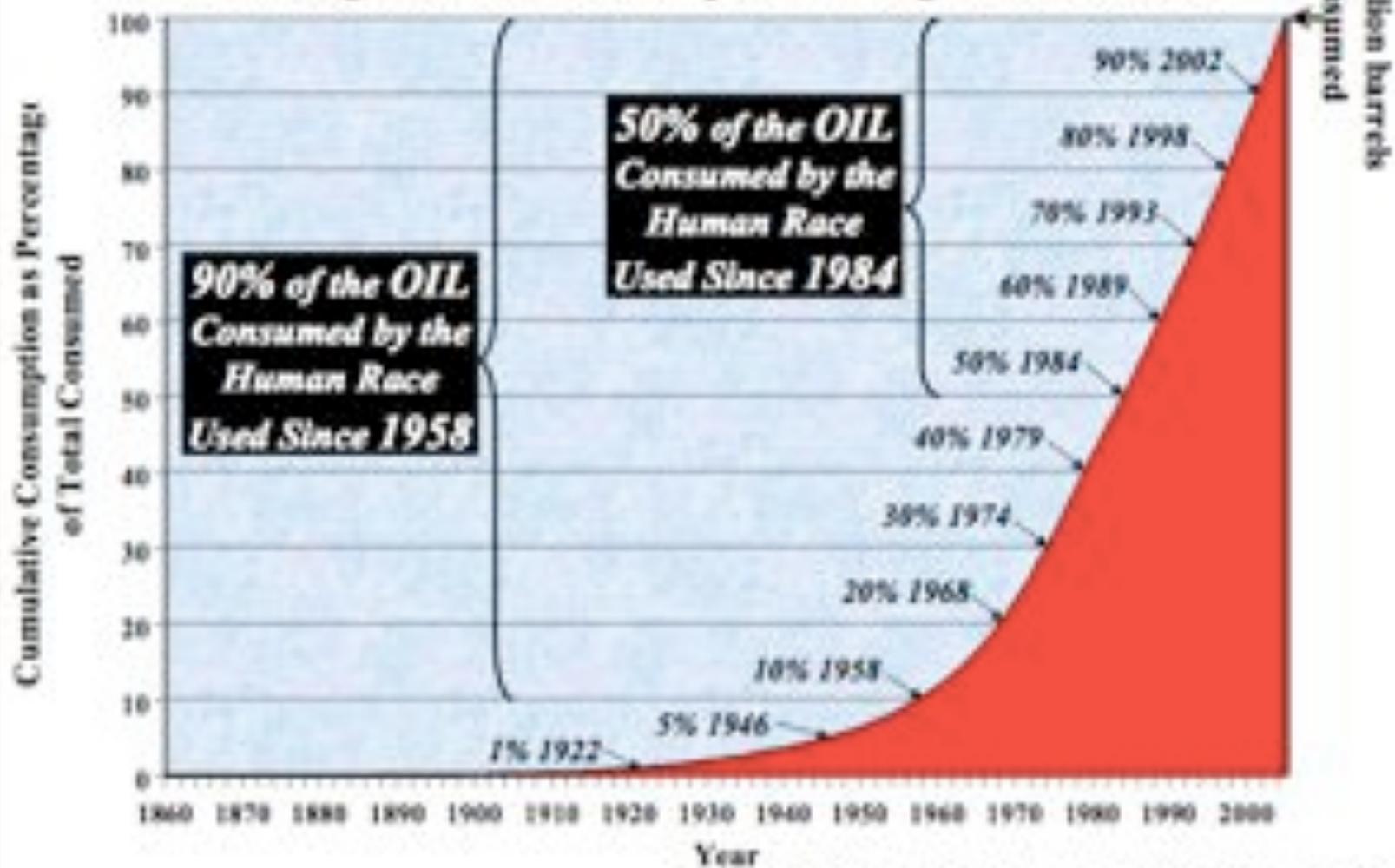
# Oil Dependence

The U.S. uses 25% of the world's oil, owns 3% of reserves, we import 60 % of our oil, 30% from unstable regions

In Jim Woolsey's words, we are funding both side of the war on terror: our guys and the guys who are funding the bad guys



## Cumulative Oil Consumption by the Human Race as a Percentage of Total Consumption through Yearend 2005



(Source of data: BP Statistical Review of World Energy, 2006)

Are energy prices going to get high enough to drive a conversion to renewable energy?





## Clinton Global Initiative:

Sir Richard Branson pledges the entire profits of the Virgin Group for the next ten years to carbon neutral fuels



Biodiesel can be produced in small homemade facilities,

Or in larger truck mounted units.

U.S. production has risen from 500 gallons in 1999 to 150 million gallons in 2006.

Germany produces 750 million gallons



Part of Blue Sun's new transportation facility arrives, prefabricated, at the construction site in Alamosa, Colo. Blue Sun Biodiesel is spending \$1.2 million on a combined transportation

Make sure that  
corn and other  
ethanol  
feedstocks are  
grown in  
sustainable  
ways that  
enrich soil and  
rural culture -  
ISU working on  
biorefineries  
combining  
ethanol and  
biodiesel



We can choose  
a world of  
efficiency and  
renewable  
energy



Wind is the 2nd fastest  
growing energy supply  
technology in the  
world:  
15 GW last year  
3/kWh in good sites



Check out what Alameda County has done



2.3 MW solar array will save \$700,000 annually-  
rebates from the utility will pay for half

# Photovoltaic innovations

Sept. 2005 Sharp begins new mass production process of amorphous thin film cells - boost cell efficiency 50 % - produce 15 MW per year. Sharp has pledged to be a zero global warming impact company

Opti-solar solar cells - amorphous thin film competitive with grid electricity - in development and should be on line in 4 years

# China - 1 MW grid interconnected



China has replaced the United States as the world's leading consumer of most basic commodities, like oil, grain, coal, and steel.

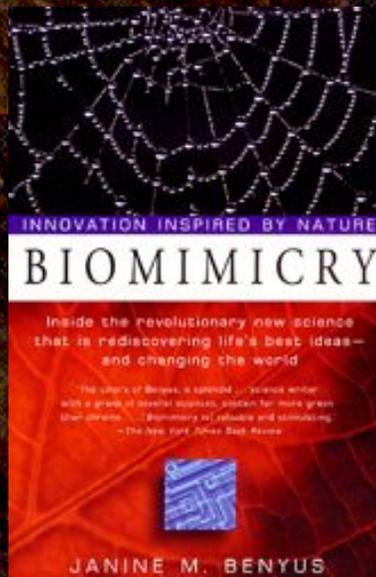


© Wade Gupta

If China's economy grows at its current rate and uses resources as inefficiently as we do, by 2030 will need **99 million barrels of oil** a day. The world currently produces 79 million barrels per day and may never produce more.



Janine Benyus



## How does nature do business?

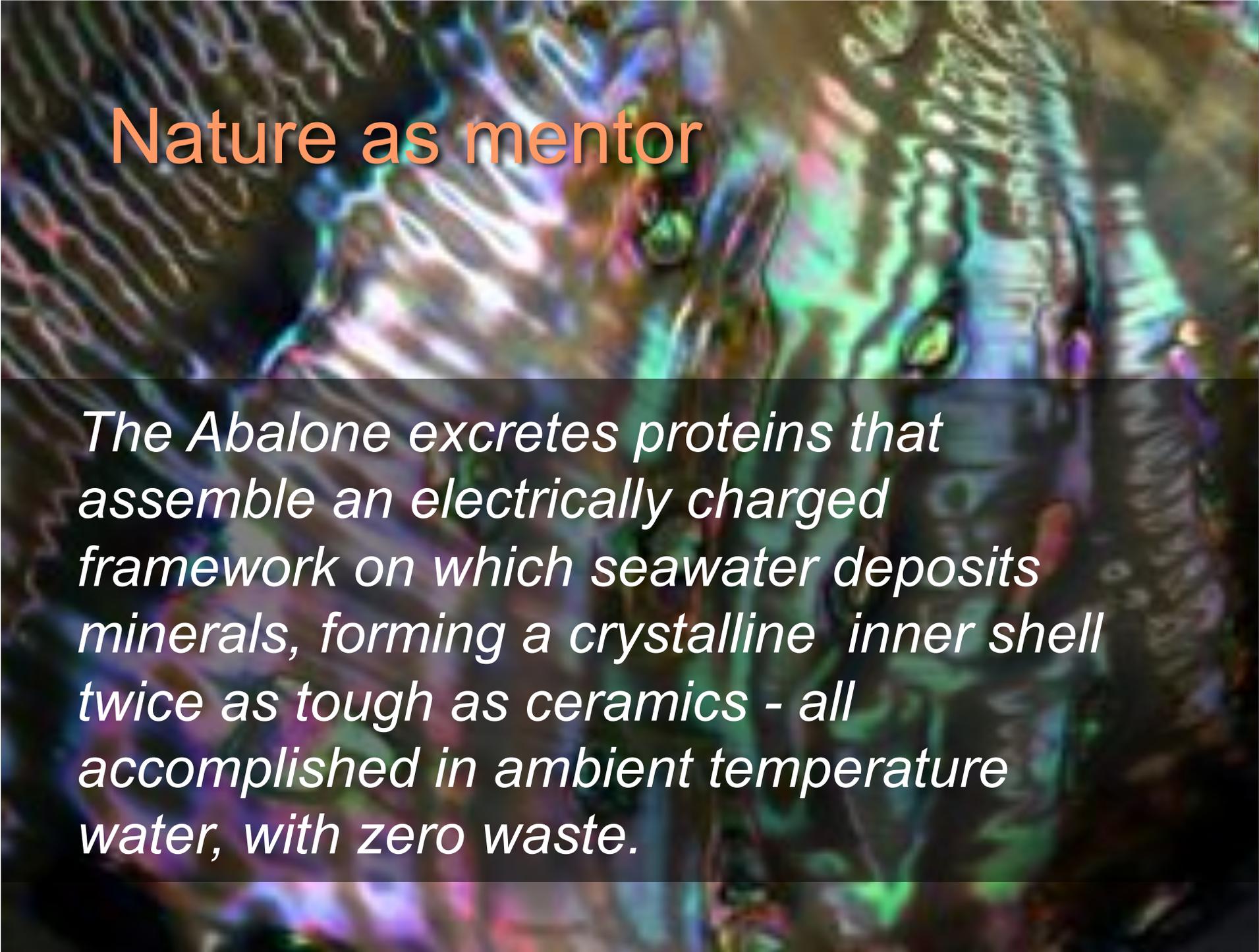
### Nature uses:

- Sunlight
- Low energy flows
- No persistent toxics
- Near Body manufacturing
- Ambient temperature manufacturing
- Closed loops, in which everything is recycled
- Nature shops locally



## Nature as mentor

*Spiders make silk, stronger than steel and tougher than Kevlar, from digested crickets and flies, at room temperature without boiling sulfuric acid and high-pressure extruders.*



## Nature as mentor

*The Abalone excretes proteins that assemble an electrically charged framework on which seawater deposits minerals, forming a crystalline inner shell twice as tough as ceramics - all accomplished in ambient temperature water, with zero waste.*

How would you design a sewage plant if you had to live downwind?



# Eco Machines

Eco Machines™ turn sewage into clean water and flowers.



Dr. John Todd

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

Eco Machine™  
at Oberlin  
College



The Body Shop had  
an Eco Machine™  
in its boutique in  
Toronto

Nature creates conditions  
conducive to life



# The Ultimate Evidence:

## Synthetic Compounds Found In Mother's Milk

### HALOGENATED COMPOUNDS

chlorodifluoromethane  
chlorotrifluoromethane  
dichlorofluoromethane  
chloromethane  
trichlorofluoromethane  
dichloroethylene  
Freon 113  
methylene chloride  
chloroform  
1,1,1 – trichloroethane  
carbon tetrachloride  
trichloroethylene  
chloropentane  
chlorobenzene  
iodopentane  
3-methyl-1-iodobutane  
chloroethylbenzene  
dibromodichloromethane  
dichlorobenzene  
trichlorobenzene

### ALDEHYDES

acetaldehyde  
methyl propanal  
n-butanal  
methylbutanal  
crotoaldehyde  
n-penanal  
n-hexanal  
furaldehyde  
n-heptanal  
benzaldehyde  
n-octanal  
phenyl acetaldehyde  
n-nonanal  
methyl furaldehyde  
n-decanal  
n-undecanal  
n-dodecanal

### KETONES

acetone  
methyl ethyl ketone  
methyl propyl ketone  
methyl vinyl ketone  
ethyl vinyl ketone  
2-pentanone  
methyl pentanone  
methyl hydrofuranone  
2-methyl-3-hexanone  
4-heptanone  
3-heptanone  
2-heptanone  
methyl heptanone  
furyl methyl ketone  
octanone  
acetaphenone  
2-nonanone  
2-decanone  
alkylated lactone  
phthalide

### OXYGENATED ISOMERS

$C_4H_6O$   
 $C_4H_8O$   
 $C_5H_{10}O$   
 $C_4H_6O_2$   
 $C_7H_{10}O$   
 $C_7H_{14}O_2$   
 $C_6H_6O_2$   
 $C_6H_{16}O$   
 $C_7H_8O_2$   
 $C_9H_{18}O$   
 $C_8H_6O_2$   
 $C_{10}H_{12}O_2$   
 $C_{10}H_{14}O$   
 $C_{10}H_{16}O$   
 $C_{10}H_{18}O$   
 $CH_{10}H_{20}O$   
 $C_{10}H_{22}O$   
 $C_9H_8O$

### ALCOHOLS

methanol  
isopropanol  
n-propanol  
1-butanol  
1-pentanol  
x-furfuryl alcohol  
2-ethyl-1-hexanol  
phenol  
2,2,4-trimethylpenta-1,3-diol  
x-terpineol

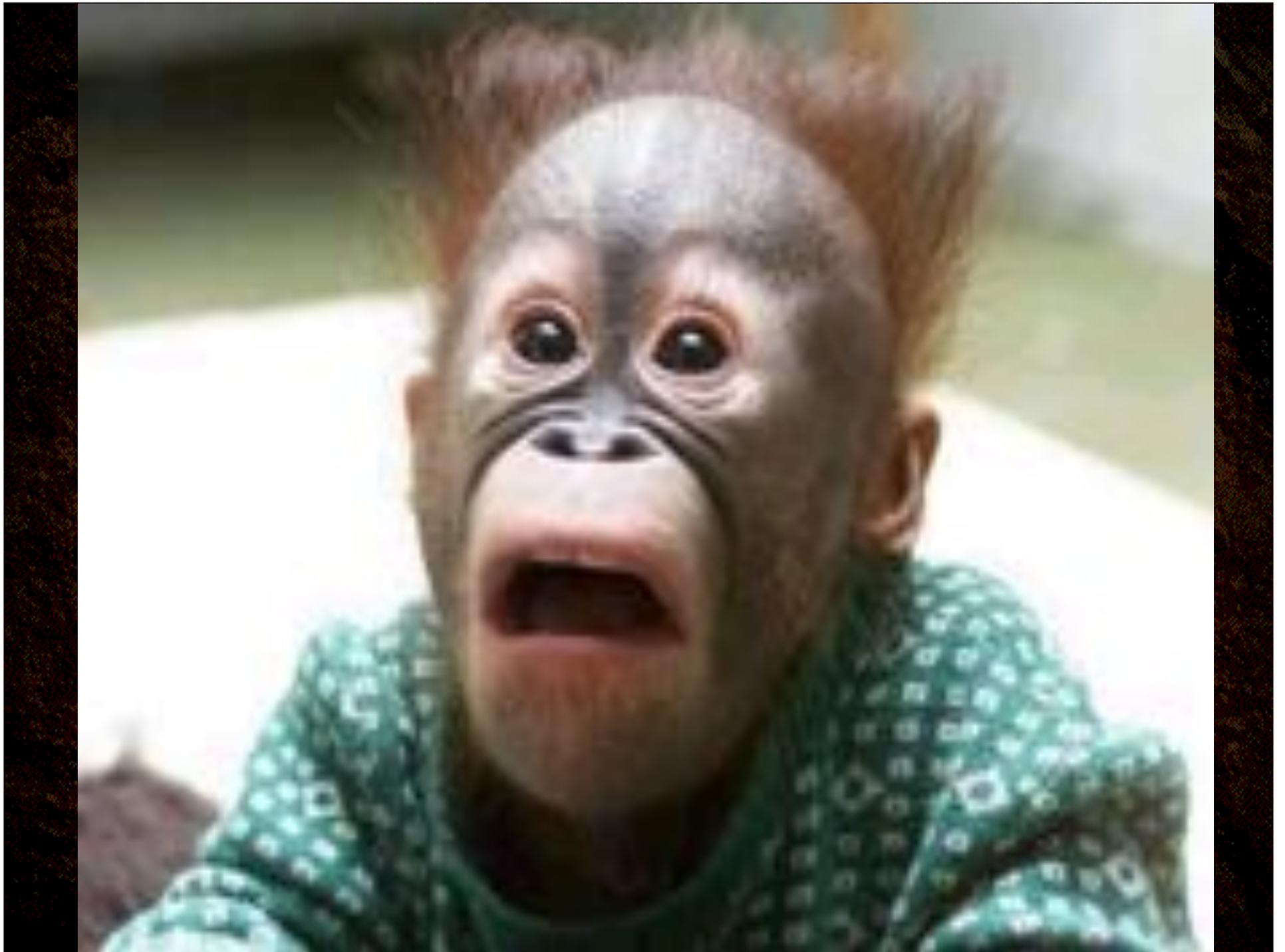
### ACIDS

acetic acid  
decanonic acid

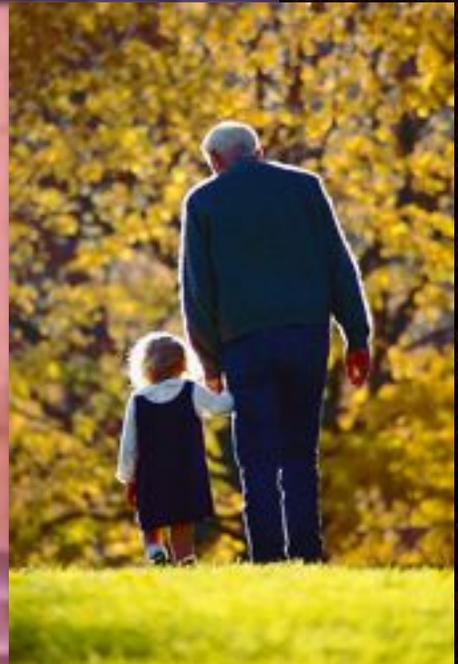
# Nature as mentor

Design that adopts the  
experience of life, refined by  
3.8 billion years of rigorous  
testing.

All products that didn't work  
were recalled by  
the Manufacturer.



# Vital Role for Governments



I am a professor of a discipline  
that did not exist when I went to  
college



# Creating whole new institutions



Presidio School of  
Management -  
accredited MBA in  
Sustainable  
Management

Presidio integrates  
sustainability  
throughout all of the  
core business  
classes

The second mouse gets the cheese





Is there a  
business case  
for  
sustainability?

Yes...  
one you ignore  
at your peril



# Removing the contradiction between work life and home life

Corporate Citizenship Study: When consumers learn about a company's negative practices:

91% say they'd consider switching

85% say they'd pass information to others

83% say they'd refuse to invest

80% say they'd refuse to work there

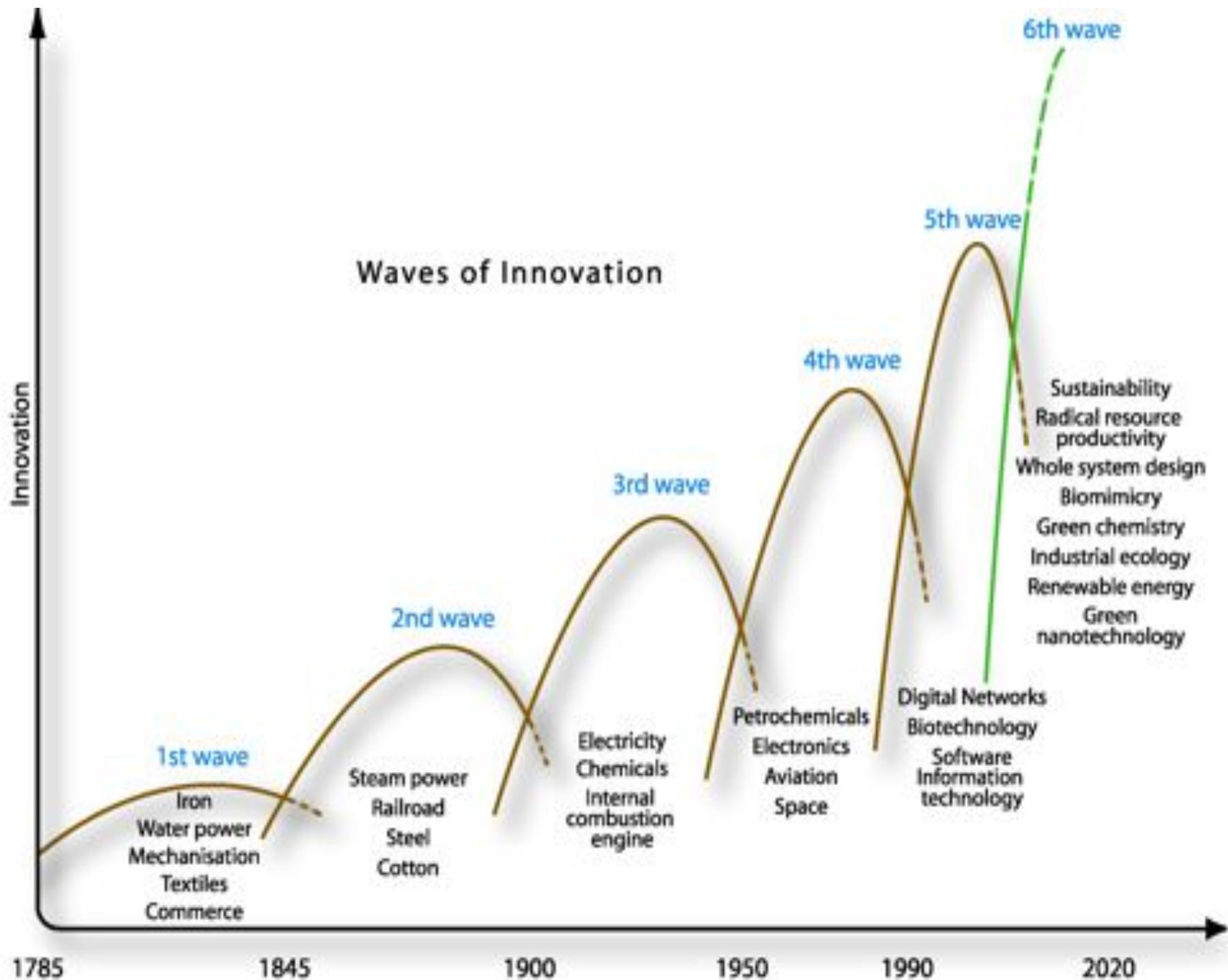
76% say they'd boycott its products

Source: Marc Gunther, *Faith and Fortune*, 2005

# *“The Integrated Bottom Line”*

## *The Business Case for Sustainability Enhancing Shareholder Value:*

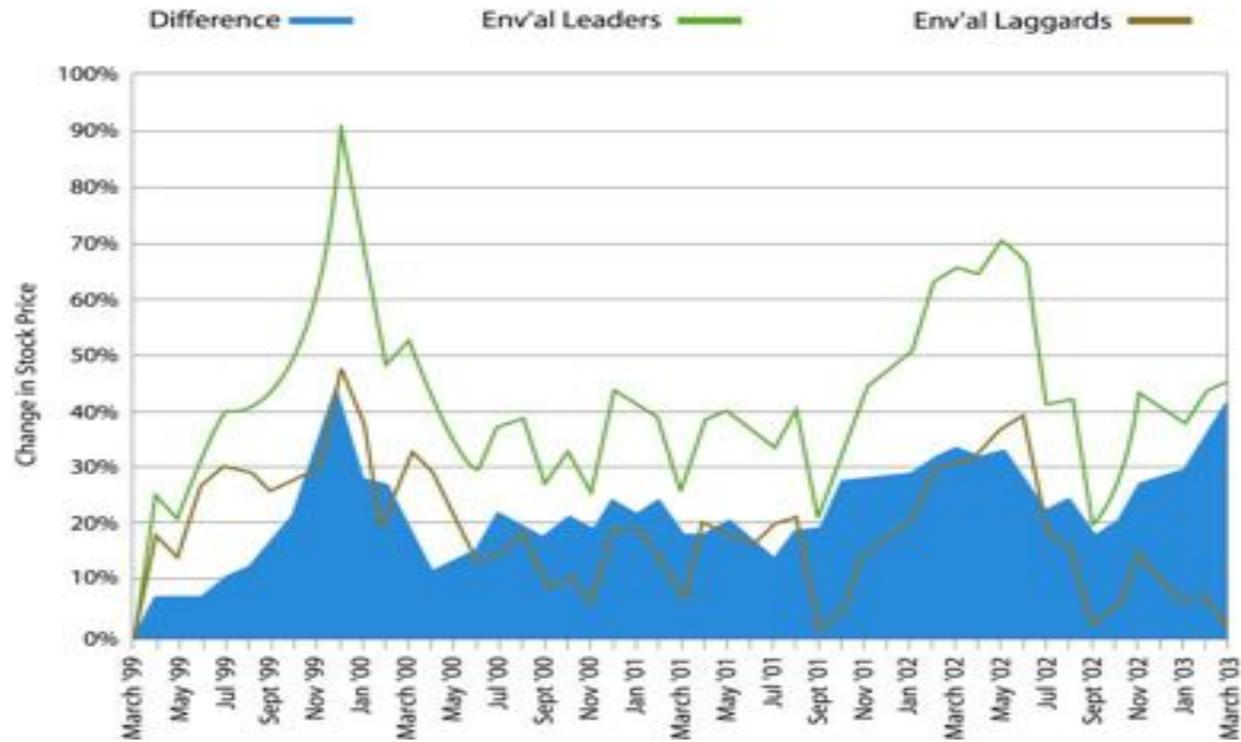
- Financial performance
  - Reduced cost, enhanced profitability
- Reduction of risk
  - Franchise to operate, legal liabilities
- Attraction and retention of best talent
- Labor productivity - increased worker health
- Ability to drive innovation
- Market share - enhanced brand equity
  - Product differentiation
- Supply chain and stakeholder management
- Reducing cost of distrust
- “First to the future” = the billionaires of the future



# Sustainability pays

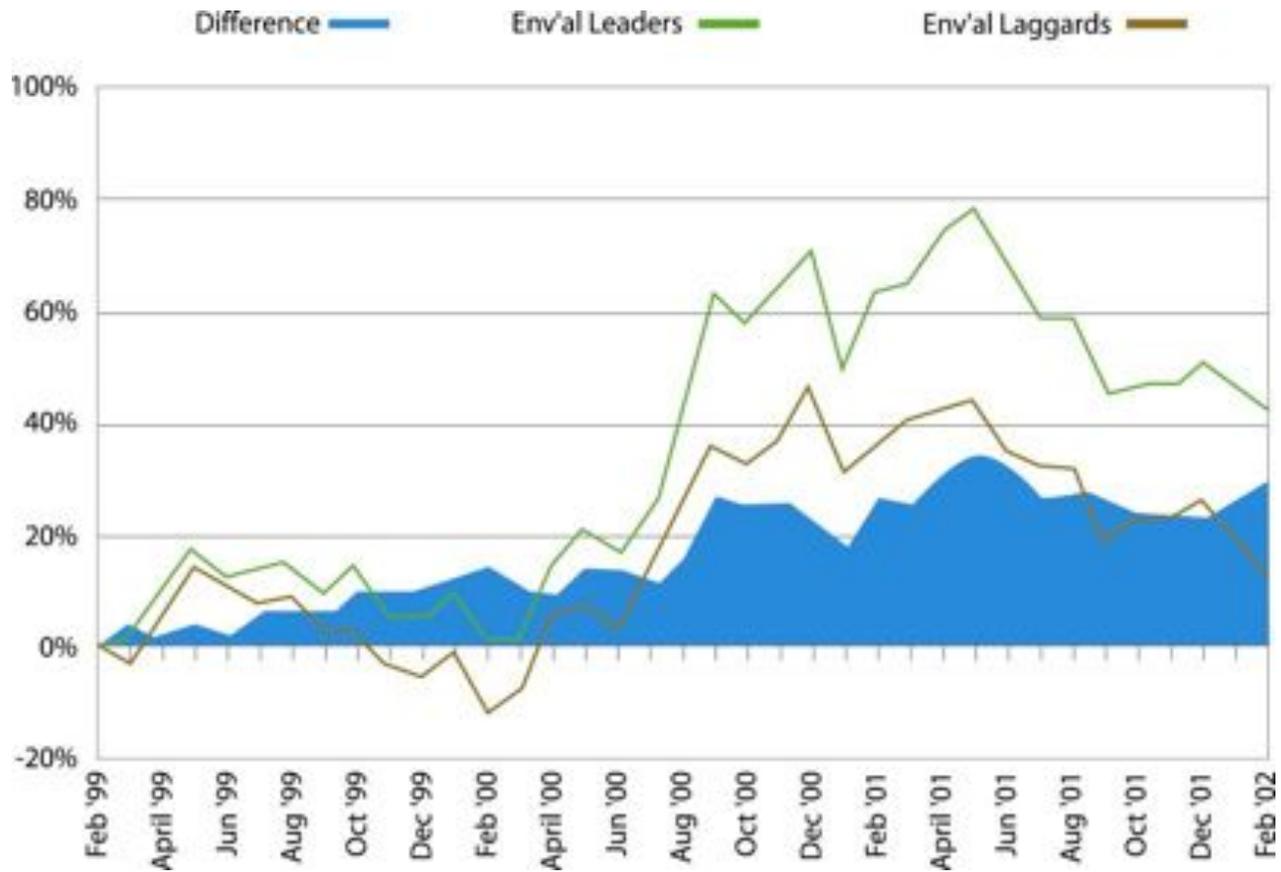
- It is no accident that the companies in the Dow Jones sustainability Index outperform the general market
- New report from Goldman Sachs July 5-6: Companies considered leaders in environmental, social and governance (ESG) policies are leading the pack in stock performance—by an average of 25%. 72% of the companies on the list outperformed industry peers.
- Regions that protect their environment outperform those that do not

### Percentage change in total return of environmental leaders vs. laggards in the forest and paper products sector 1999-2003.



**Source:** Innovest Group

### Percentage change in total return of environmental leaders vs laggards in the USA electric utilities sector 2000-2003



**Source:** Innovest Group

Innovest  
STRATEGIC VALUE ADVISORS



Carbon Beta™  
and Equity Performance  
*An Empirical Analysis*  
Moving from Disclosure to Performance

Only 1% of companies signing CDP are investing with strategy that takes carbon into account.

Carbon Beta seeks to show that there is compelling evidence that integrating climate risk will significantly enhance financial performance

2005 PWC survey of CEOs from 43 countries:  
87 percent believed that environmental sustainability  
is important to a company's profits,  
up from 79 percent in 2004 and 69 percent in 2003

89% of Fortune 1000 think sustainability will be  
a more significant issue in 5 years

150 largest companies in the world have  
“sustainability officer” at VP level or higher

Davos CEO Survey : going beyond compliance gives

- Enhanced reputation: 90%
- Competitive advantages: 75%
- Cost savings: 73%

“There can't be anything good about putting all these chemicals in the air.

There can't be anything good about the smog you see in cities.

There can't be anything good about putting chemicals in these rivers in Third World countries so that somebody can buy an item for less money in a developed country.

Those things are just inherently wrong, whether you are an environmentalist or not.”

**Lee Scott - CEO Wal-Mart**

# Wal-Mart - The tipping point?

Increase vehicle fleet efficiency 25% in 3 yrs  
Double it in 10 years

Invest \$50 million in sustainability projects

Reduce energy use in stores 30%

100% renewable energy

Ethanol retailer

Reduce solid waste 30% in 3 years

Become the world's leading organic retailer

Green supply chain: FSC, MSC certified products

Two green super-centers

**BENTONVILLE, Ark., Nov. 29, 2006** ∓ Wal-Mart Stores, Inc., the world's leading retailer, announced a campaign to sell 100 million compact fluorescent light bulbs (CFLs) by the end of 2007.

This could save customers as much as \$3 billion

"Families should have access to affordable, sustainable goods, and compact fluorescent lightbulbs are a great way for our customers to save money."

Andy Ruben

Wal-Mart Vice President of Corporate Strategy and Sustainability



# The Business Case

Stock Price has fallen 30% since Scott took over

Grew 1,205% in 90's

6,600 big box stores, 61,000 suppliers

Biggest private user of electricity in U.S.

Numerous critics

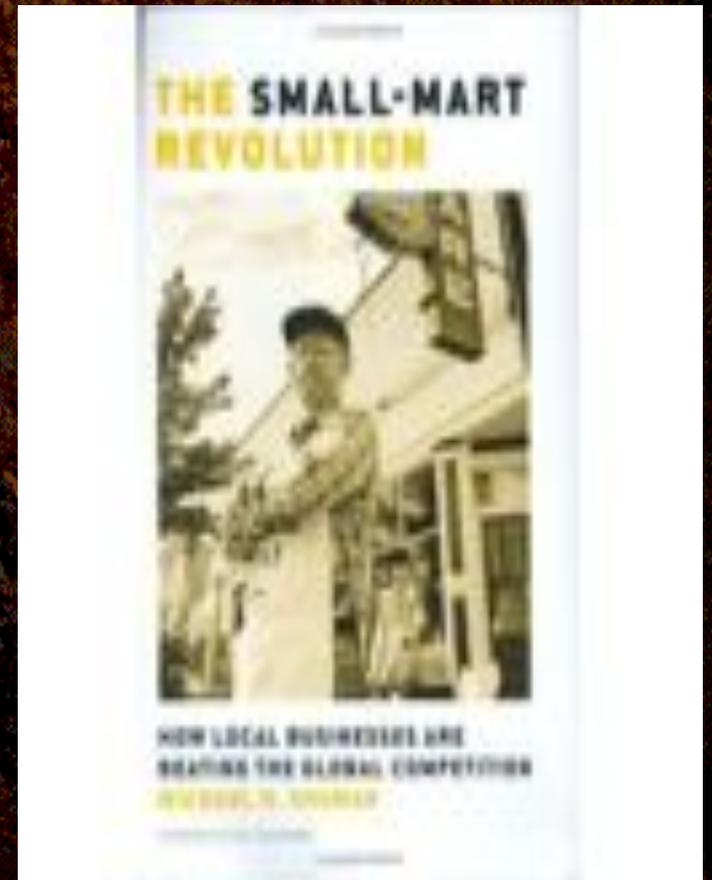
# A truly sustainable Wal-Mart ?

Committed:  
Leading organic retailer

Possible:  
Green education?

Local ownership?  
Local purchasing?

Local business economy?



# Global Sustainability Report Output by Year

© CorporateRegister.com – December 2005, Based on 10402 Reports – 2005 Still Being Calculated



# The Company We Keep

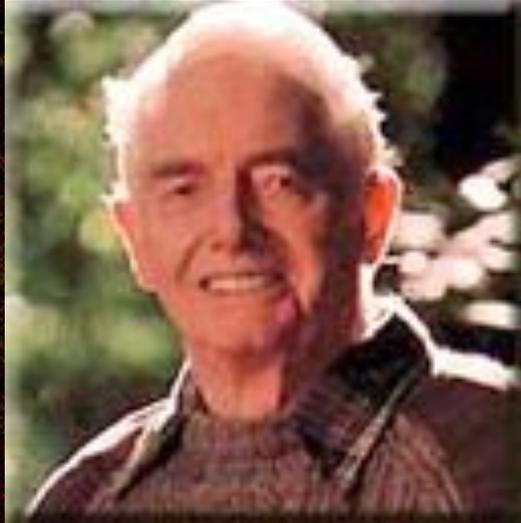


“Our central message is that... managers must start to recognise environmental improvement as an **economic and competitive opportunity**.. it is time to build on the underlying economic logic that links the environment, resource productivity, innovation, and competitiveness”.

**Professor Michael Porter**  
Harvard Business School  
*Author of Competitive Advantage of Nations*

# Natural Capitalism: A competitive advantage:

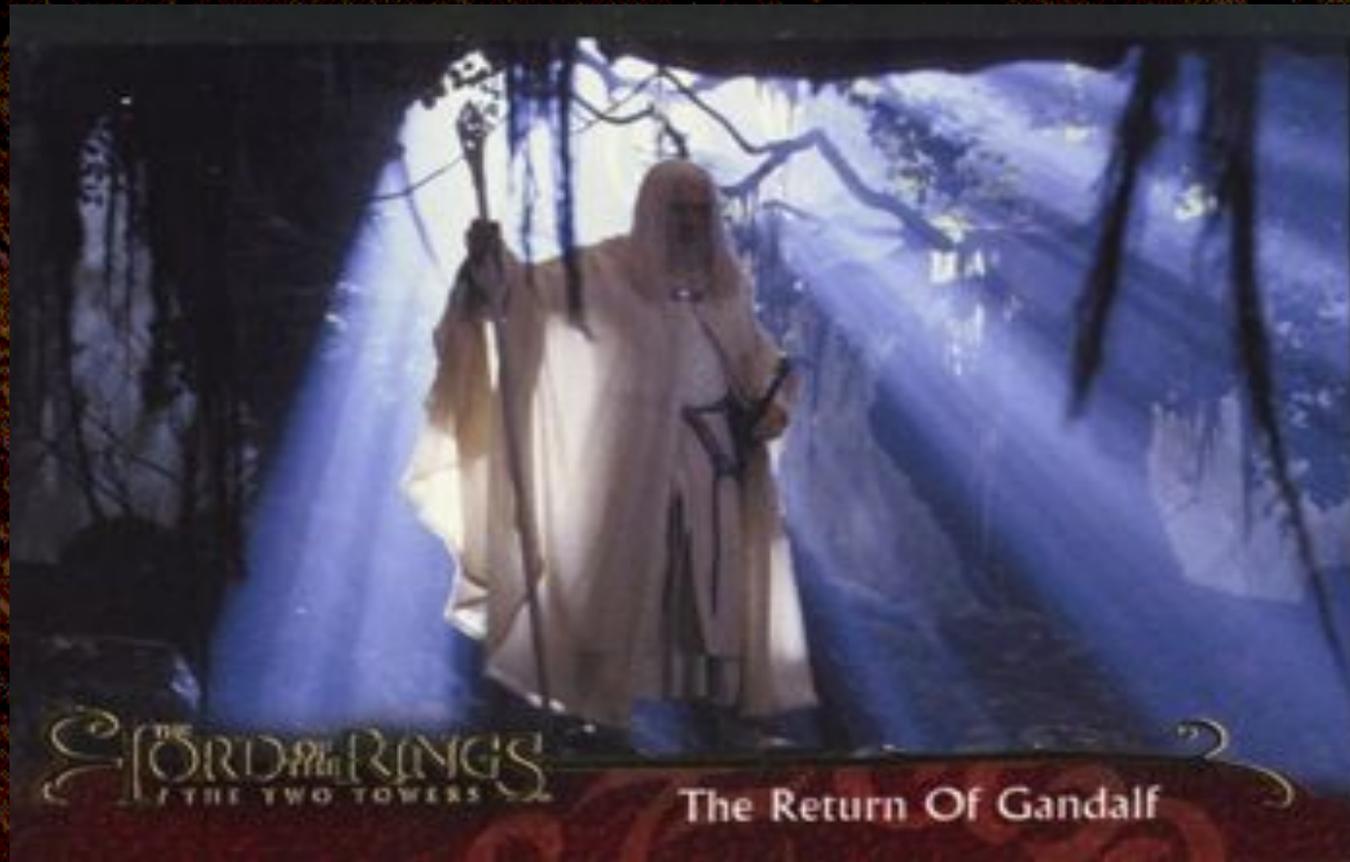
1. Buy time by radically increasing resource productivity
2. Design for sustainability:  
Biomimicry: closed loops, no waste, no toxicity
3. Manage for restoration of human and natural capital



## David Brower:

What do we want the earth to be like fifty years from now? Let's do a little dreaming.

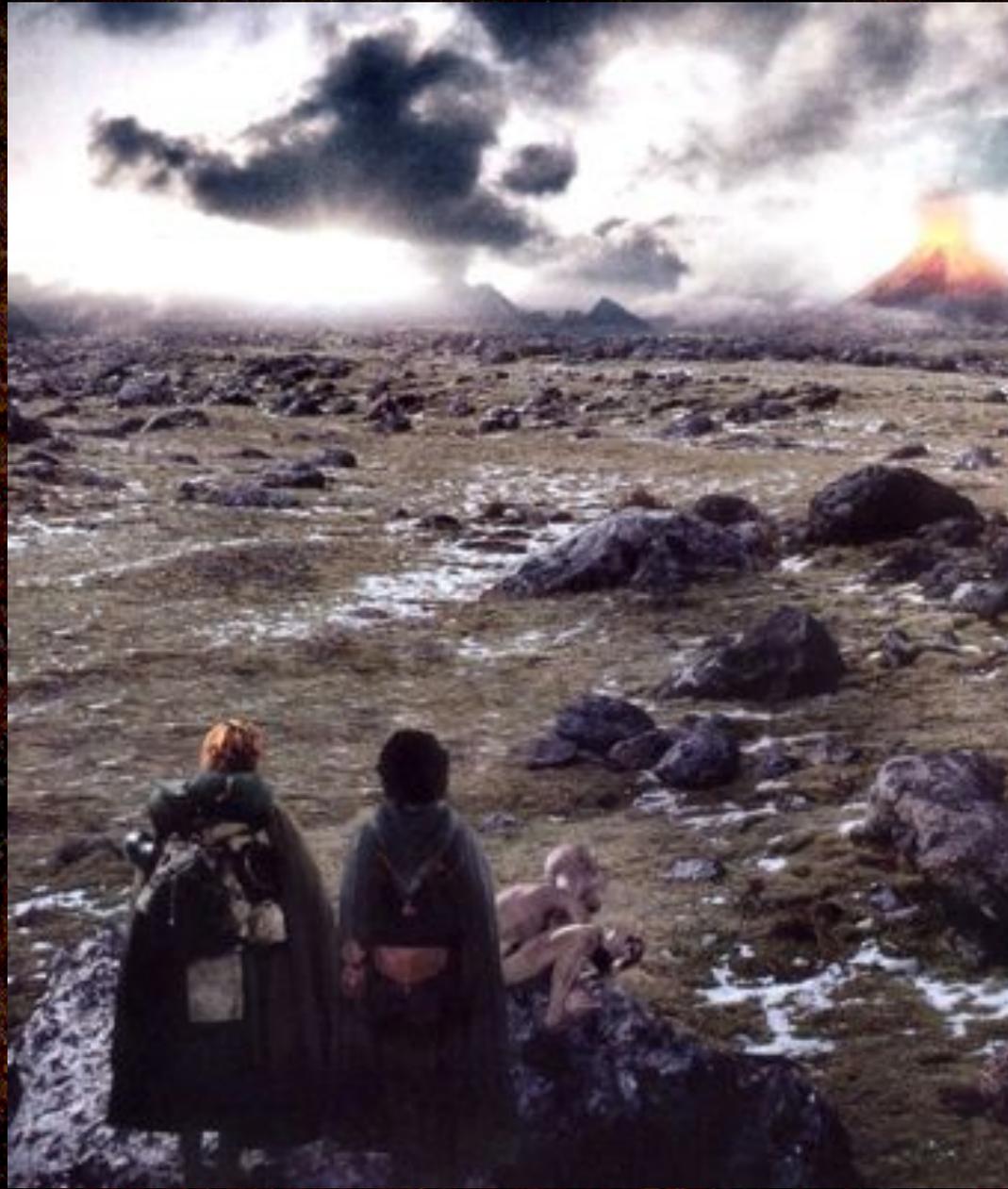
Aim high! Navigators have aimed at the stars for centuries. They haven't hit one yet, but because they aimed high they found their way



The rule of no realm is mine but all worthy things that are in peril as the world now stands, those are my care. And for my part I shall not wholly fail if anything passes through this night that can still grow fair and bear fruit and flower again in the days to come. For I too am a steward, did you not know?



In the end, it was two rather ordinary, playful, unassuming hobbits who undertook to save the world. Despite their fears, they took the future of the world on their shoulders, and all the wizards and kings and warriors could only play a supportive role.



Real leadership is extraordinary courage by ordinary people

A hand in a white, segmented, worm-like suit reaches out from a dark, textured hole in a brown, rocky surface. The hand is holding a small, realistic Earth planet. The scene is set against a dark, textured background that looks like a cave or a tunnel.

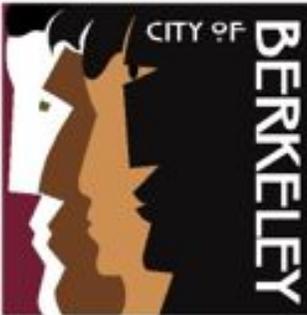
It's up to you



# Natural Capitalism Solutions

ELDORADO SPRINGS, COLORADO

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



## TIMELINE

**October 23, 2007**  
**Berkeley Breakthrough on Financing  
Solar Energy and Energy Efficiency**

**Berkeley, CA – Berkeley is set to become the first city in the nation to allow property owners to pay for energy efficiency improvements and solar system installation as a long-term assessment on their individual property tax bill.**

October 23: Berkeley, California, press release

October 30: State Attorney General & Treasurer to work for statewide version

November 1: US DoE pledges support

June 2008: operational date

SOLAR AMERICA CITY  
2007

