

The Business Case for Climate Protection

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Climate protection is profitable. Companies and countries are prospering from cutting energy use and installing renewable energy, even in challenging times. This paper presents the good news and lays out a roadmap for how you can become a part of the solution. It shows that intelligent use of market mechanisms can solve the climate crisis not at a cost but as an investment, delivering enhanced profitability as well as in a better future for all of the world's people. The best and fastest way to protect the climate is to reduce the unnecessary use of fossil energy. Cutting waste saves money, whether you are a business leader or head of a household.

The case stories below demonstrate that entrepreneurship is alive and well. Which is good: without it no solution to climate change makes any sense. Throughout history, the nations that have innovated to meet human needs have ruled the world, economically, politically and militarily.

The current economic crisis is an extremely fluid situation that could go in any of several directions. Commitments by global leaders to a green economy could turn the world around. Conversely, delay in implementing sustainable measures could deepen the current depression, now recognized as the worst since the 1930s.¹

The one thing that is clear is that business as usual will not endure, and would be a recipe for disaster. Change will occur because past behaviour is no longer sufficient to deal with the very serious challenges facing the world. Businesses and industrial policy will implement the measures described in this paper or the world will face crises far exceeding what this young century has already brought.²

The choices you make this year and next will determine whether you, your community and ultimately your country comes out of the economic collapse prosperous and in a position to secure the future we want, or whether life will become an unending reaction to emergencies that relentlessly defeat our ability to cope. We've done it before. The 2030 project points out that, "During the 1970's oil crisis (an 11-year period from 1973 to 1983), this country, drawing on American determination and ingenuity, increased its real GDP by over one trillion dollars (in Year 2000 dollars) and added 30 billion square feet of new buildings and 35 million new vehicles, while decreasing total US energy consumption and CO2 emissions. This was accomplished with increased efficiency and with cost-effective, readily available, off-the-shelf materials, equipment and technology.³

This reality, now recognized as "the sustainability imperative,"⁴ is inexorably driving companies to implement practices that are more responsible to people and the planet because they are more profitable. When the likes of Goldman Sachs report that the companies that are the leaders in environment, social and good governance policies have 25 percent higher stock value, change is underway.⁵ Walmart has begun to require its 60,000 to 90,000 suppliers to answer a sustainability scorecard tracking their carbon footprint, their impact on water and other resources, and their engagement with local communities, behaving in more sustainable ways has moved from a chic, niche position to an imperative.⁶

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Melting capital and the warming climate

Two words define our age: climate and capitalism.

People raised on images of limitless possibilities, muscle cars, western superiority in world markets and a rising standard of living watched in shock as General Motors, the iconic American business, melted into bankruptcy in 2008. For many the magnitude of that collapse has yet to sink in. Nor has the recognition that Toyota is now the world's largest car company, riding to pre-eminence on a fuel-efficient vehicle seems an affront to everything that made America great. The economic collapse of 2008 that devastated communities and families, throwing over 5 million people out of work, sending unemployment over 25 percent in cities like Detroit, and a shattering prosperity raised hopes of a recovery to almost everyone's top priority.

Another melt-down, however, poses an even greater threat. In fall 2009, the United Nations warned that even if the nations of the world delivered on existing promises to cut emissions of greenhouse gasses (GHGs), the globe would still warm beyond levels ever experienced by humankind by the end of the century, perhaps sooner. Unless human-caused emissions of carbon dioxide (CO₂), now higher than at any time in human existence, and the five other gasses that are causing what has come to be known as "climate chaos" are immediately reduced, we'll lose a lot more than jobs in Detroit. Dr. Rajendra Pachauri, the chairman of the UN's Intergovernmental Panel on Climate Change (IPCC), told an international gathering of 114 governments, "Climate change is for real. We have just a small window of opportunity and it is closing rather rapidly. There is not a moment to lose." He concluded, "We are risking the ability of the human race to survive."⁷ Former U.N. Secretary General Kofi Annan put it a bit more simply, "The very basis for life on earth is declining at an alarming rate."⁸

Climate chaos is not a future threat. It is real, it is here today and it is already causing misery around the globe. Left unchecked, it will get far worse.

As devastating fires sweep Australia, Greece, and the western U.S., and droughts cripple agriculture in India, China, and California, climate change is fuelling heat waves across the world, worsening outbreaks of diseases, and causing a scary litany of impacts. At the same time, major storms have also increased, causing floods from China to Europe to the Southeastern U.S.. Hurricanes sweep the Caribbean and Latin America, as cyclones batter the Philippines and Burma. Even the conflict raging in Darfur has been recognized by the U.N. as the result of the 40 year drought caused by the warming climate.⁹ If left unchecked, climate change will overwhelm most nations' abilities to cope, and its impacts are being felt now around the world, especially on the poor, for whom environmental degradation is always most severe.¹⁰

The drastic melt-off of glaciers in Greenland, and the polar regions threatens to raise sea levels,¹¹ at the same time that the loss of glaciers in the Himalaya will deny water to 40 percent of people on earth, from China to India.¹² At current rates the glaciers will be gone within a decade. United Nations Development Programme (UNDP) warns that agricultural systems will begin to fail due to increasingly variable weather patterns, leaving increasingly large numbers of people facing malnutrition.¹³ Water losses could affect 1.8 billion more people by 2080, and retreating glaciers in the Himalaya could disrupt ecological systems in China and South Asia.¹⁴

The shift in the monsoon rains has already caused crop losses on a massive scale, leading over 1,500 farmers in India to commit suicide together in the summer of 2009.¹⁵ The Murray Darling River basin in Australia no longer carries the water that used to irrigate rice fields that supplied the second largest rice mill in Southeast Asia. It recently was forced to shut down, triggering food riots on three continents.¹⁶

Climate chaos is now scientifically undeniable. In March 2009 the International Alliance of Research Universities convened an international scientific congress, Climate Change: Global Risks, Challenges and Decisions, to review the state of global climate science and to update the science that underpinned previous IPCC reports.

Most of the 2,500 people attending the Copenhagen Congress were scientific researchers; many had contributed to the IPCC report. Participants came from nearly 80 different countries, giving more than 1,400 scientific presentations.¹⁷

The Congress agreed, "The scientific evidence has now become overwhelming that human activities, especially the combustion of fossil fuels, are influencing the climate in ways that threaten the well-

being and continued development of human society.”¹⁸

The Report concluded that “greenhouse gas emissions and many aspects of the climate are changing near the upper boundary of the IPCC range of projections. Many key climate indicators are already moving beyond the patterns of natural variability within which contemporary society and economy have developed and thrived.... Societies and ecosystems are highly vulnerable to even modest levels of climate change,” the Report noted, with poor nations and communities, ecosystem services and biodiversity particularly at risk. Temperature rises above two degrees Celsius will be difficult for contemporary societies to endure, and are likely to cause major societal and environmental disruptions through the rest of the century and beyond.”

The report called for “Rapid, sustained, and effective mitigation based on coordinated global and regional action is required to avoid ‘dangerous climate change’ regardless of how it is defined. Weaker targets for 2020 increase the risk of serious impacts, including the crossing of tipping points, and make the task of meeting 2050 targets more difficult and costly.”¹⁹

In light of this and similar science coming in from around the world, NASA scientist, Dr. Jim Hanson advises: “Don’t ask what’s possible, ask what’s necessary.”²⁰ What’s necessary, he has been warning for several years, is 350 parts per million. That is the concentration to which CO₂ in the atmosphere, the most plentiful of the gasses that are warming the climate, must be limited. Recently Dr. Rajendra Pachauri, the head of the UN’s Intergovernmental Panel on Climate Change, confirmed that Hanson is right, stating, “What is happening, and what is likely to happen, convinces me that the world must be really ambitious and very determined at moving toward a 350 target.”²¹

But CO₂ concentrations in the atmosphere now stand at 385 to 387 parts per million CO₂, well beyond the 350 level leading scientists believe is “safe.” By “safe,” by the way, they mean that humanity will have a 50□50 chance of avoiding climate catastrophe. If a friend told you, “Come drive with me, there’s a 50□50 chance you won’t get in a fatal car wreck,” you would choose another car. Even at 350 parts per million, the world would still be well above the historic level of CO₂ concentration under which the earth’s ecosystems evolved. And even if the world stopped burning fossil fuels today, concentrations and warming would still go up for a while because of time lags in the system.²²

Dr. Hanson and Dr Pachauri and essentially all of the world’s climate scientists now state that if the nations of the world fail to act decisively in the next few years, it may become impossible to prevent runaway climate change that will end life as we know it on earth.²³ Dr. Pachauri stated, “If there’s no action before 2012, that’s too late. What we do in the next two to three years will determine our future. This is the defining moment.”²⁴

Any sober look at the climate chaos now ravaging the globe makes it clear that we need a miracle. Sydney Harris once penned a cartoon in which two scientists are scribbling equations on a chalk board. In the middle one wrote, “Then a miracle occurs.” The other scientist says, “I think you need to be a little more explicit here in step two.”

Bill Becker who ran the Presidential Climate Action Project, said. “if we insist on ruining the planet we’re going to have to stop claiming we’re a superior species.”²⁵ Ray Anderson, the business leader who Chaired the President’s Council on Sustainable Development, put it bluntly, “What’s the business case for ending life on earth?”²⁶

What is little recognized is that the twin threats to the climate and to the economy are linked in both cause and cure. Unless nations move aggressively to implement energy efficiency and renewable energy, key elements of the transition away from the fossil fuels that are driving climate change necessary to save the climate, it is difficult to see how our economy can recover or avoid further crises. Solving the climate crisis IS THE WAY out of the economic crisis.

The fossil industries have spent at least 63 million²⁷ trying to make you believe that any reduction in the use of their product will cripple the economy and ruin business. The U.S Chamber of Commerce funded teams to visit every local chamber of commerce across the country to argue that the science of climate change isn’t settled, there’s no proof, but even if the climate is changing, the real issue is jobs for Americans right here in our cities. Any legislation, they claim, to reduce the amount of

energy that nations use will strangle our way of life, and be ruinous to business.²⁸

The truth is quite the contrary. Unless everyone, homeowners, businesses and governments capture every opportunity to save money by saving energy and other resources, no economic measures will bring real prosperity. The evidence, presented below, shows this: so long as Americans continue borrowing \$2 billion a day to buy fossil oil from distant and unstable parts of the globe, no durable recovery will be possible.²⁹

In early 2009, Jonathan Porritt, a member of the British Parliament and advisor to the Prince of Wales, warned that, "People seem blind to the fact that the causes of the economic collapse are exactly the same as those behind today's ecological crisis and behind accelerating climate change in particular."

Porritt cited the UK government's chief scientific adviser, John Beddington, who predicted, "A 'perfect storm' of food shortages, scarce water and high-cost energy will hit the global economy before 2030. Factor in accelerating climate change and this lethal cocktail leads to public unrest, cross border conflict and mass migration—in other words, an economic and political collapse that will make today's economic recession seem very tame indeed." Porritt agreed, but predicted that the storm would hit by 2020, and was linked with the current economic collapse.

He observed:

On the environment front, as our financial debts have built up, so have our debts to nature – in terms of the unsustainable depletion of natural resources, measured by the loss of topsoil, forests, fresh water and biodiversity. Everybody knows that liquidating capital assets to fuel consumption is crazy but nobody seems to know how to stop it.

There is a simple conclusion here: the self-same abuses of debt-driven 'casino capitalism' that have caused the global economy to collapse are what lie behind the impending collapse of the life-support systems on which we all ultimately depend. ³⁰

Capitalism to the Rescue

Critics argue that the science is uncertain. Absolutely. Scientists don't know how bad it's going to be, or how fast climate chaos will proceed. Observed reality is now outrunning the scientific models, happening faster even than the most alarmed scientists predicted.³¹

But with all due respect to the great climate scientists, let's assume that the sceptics are correct. They are not, and you would be a fool to go to Vegas on the odds that they might be. But in a sense, the science is irrelevant. If all you are is a profit maximizing capitalist, you'll do exactly the same thing you'd do if you were scared to death about climate change because we know how to solve this problem at a profit and smart companies are getting about it.

DuPont was one of the early leaders; about a decade ago they pledged to cut carbon emissions 65 percent below their 1990 levels by 2010. That's a little bit more ambitious than the U.S., which yet refuses to ratify the Kyoto protocol agreeing to cut emissions 7 percent below 1990 level by 2010.

Has DuPont joined Greenpeace?

No. The company made its announcement in the name of increasing shareholder value.

And it has delivered on that promise. The value of DuPont stock increased 340 percent while the company reduced global emission 67 percent. DuPont's program have now reduced emissions 80 percent below 1990 levels. Doing this created a financial savings for the company between 2000 and 2005 of \$3 billion.³² The company's climate protection program showed it costs less to implement energy savings measures than it does to buy and burn fuel, and emit other gasses. In 1999, DuPont estimated that every ton of carbon it displaced saved it \$6. By 2007, DuPont's efforts to squeeze out waste were saving the company \$2.2 billion a year. The company's profits that year were \$2.2 billion.³³

It's a company that's profitable because it's protecting the climate.

DuPont is not the edge of the envelope. Back in the 1990s, ST Microelectronics set what Jim Collins, the business author, calls a BHAG: a big hairy audacious goal. ST pledged to achieve zero net CO2 emissions, becoming carbon neutral, by 2010 while increasing production 40 fold. When the company made this pledge they had no earthly idea how to achieve it. Figuring it out drove their corporate innovation, taking them from the number 12 chip maker in the world to the number six. They won awards, and reckoned by the time they're done, they would have saved about a billion dollars.³⁴

Natural Capitalism Solutions³⁵ and other sustainability consultants work with such companies to help them cut waste, transform how they make products, and implement more sustainable ways of doing business. One company in which NCS worked had a practice of leaving its 6,300 computers and monitors turned on 24/7. Various urban myths about shortening the life of the computer by turning it off, or claims that the IT department required them to be left on was causing the company to waste energy and money. We pointed out that simply publishing a policy to have employees turn computers off when no one is in front of them would save \$700,000 the first year.³⁶ In the U.S. \$2.8 billion a year is wasted, leaving computers on when no one is using them. Such IT costs can represent a quarter of the cost of running a modern office building.³⁷

A team from Natural Capitalism worked with a large distribution center, a seven million square foot warehouse, in which 500 Watt light bulbs shone down on the tops of boxes stacked floor to ceiling. The workers below used task lighting so they could see where they were going. Simply flipping a switch would save \$650,000 dollars a year.³⁸

These savings are free – or better than free. And they exist throughout American businesses.

Even where achieving the energy savings that will protect the climate requires an upfront investment of money, it is one of the best investments a company can make in the entire economy. Johnson Diversey projects 160 percent return on their Investments to cut their carbon footprint by saving energy.³⁹ That is a little better than you're going to get in your 401K.

Given these examples of thoughtless waste, it should come as little surprise that American businesses use twice as much energy to produce a unit of GNP as do our competitors in parts of the world like Europe and Asia in which adherence to the Kyoto Protocol is driving their competitiveness.⁴⁰ But then all of the other nations in the world have signed the Kyoto Protocol, obliging them to save energy to cut carbon emissions. They are innovating to do this, saving money in the process and enhancing their competitiveness.

Risk Management in a World of Climate Chaos

Smart segments of the business world have now recognized that tolerating wasteful energy use and carbon emissions is a high-risk strategy for a company. Volatility of energy supply and increasing prices, geopolitical volatility, threats to business from extreme weather events, the risk of liability claims for failing to manage carbon all make carbon reduction simply better business.

The FTSE Index, the British equivalent of Dow Jones, states, "The impact of climate change is likely to have an increasing influence on the economic value of companies, both directly, and through new regulatory frameworks. Investors, governments and society in general expect companies to identify and reduce their climate change risks and impacts, and also to identify and develop related business opportunities."⁴¹

In 2003 the Wall Street Journal reported that the second largest re-insurance firm, Swiss Re, "has announced that it is considering denying coverage, starting with directors and officers liability policies, to companies it decided aren't managing their output of greenhouse gases."⁴² The prescience of this statement came clear as claims from weather related disasters rose twice as fast as those from all other mishaps.⁴³ 2008 was the third worst year on record for loss-producing events, with losses jumping from \$82 billion in 2007 to over \$200 billion, with more than 220,000 dead. The all time record remains 2005 with \$232 billion in

insured losses, with costs now growing 10 times faster than premiums, the population, or economic growth.⁴⁴

In 2007, the Washington Post reported that, “Nervous investors have begun asking similar questions of the insurers, asking them to disclose their strategies for dealing with global warming. At a meeting of the National Association of Insurance Commissioners, Andrew Logan, insurance director of the investor coalition, representing \$4 trillion in market capital, warned that ‘insurance as we know it is threatened by a perfect storm of rising weather losses, rising global temperatures and more Americans living in harm’s way.’”⁴⁵ John Dutton, Dean Emeritus of Penn State’s College of Earth and Mineral Sciences, estimated that \$2.7 trillion of the \$10-trillion-a-year US economy is susceptible to weather-related loss of revenue, increasing companies’ off-balance-sheet risks.⁴⁶

Investors have banded together to influence how companies address climate change. Large institutional investors are conducting shareholder campaigns urging companies to disclose climate risk and implement mitigation programs.⁴⁷

The Investor Network on Climate Risk⁴⁸ includes over 50 institutional investors collectively managing more than \$3 trillion in assets. They announced a 10-point action plan that calls on investors, leading financial institutions, businesses, and governments to address climate risk and seize investment opportunities. U.S. companies, Wall Street firms, and the Securities and Exchange Commission (SEC) were asked to provide investors with comprehensive analysis and disclosure about the financial risks presented by climate change. The group pledged to invest \$1 billion in prudent business opportunities emerging from the drive to reduce GHG emissions.

In the United States, the Sarbanes-Oxley Act⁴⁹ makes it a criminal offense for the Board of Directors of a company to fail to disclose information, including such environmental liabilities as carbon emissions that could alter a reasonable investor’s view of the organization. In France, Holland, Germany⁵⁰ and Norway, companies are already required to report their GHG emissions.

Since 2002, the British NGO, the Carbon Disclosure Project (CDP) has surveyed the Financial Times 500, the largest companies in the world. The CDP, which represents 315 global institutional investors with assets of \$55 trillion, now receives annual corporate carbon footprint reports from almost 80 percent of the Financial Times 1,800, the largest companies in the world. Institutional investors use the CDP database to make investment decisions based on a company’s greenhouse gas emissions, emission reduction goals and strategies to combat climate change.⁵¹ Companies that do not responsibly manage their carbon footprint are deemed not worthy of investment.

Initially, however, only 10% of the recipients answered. After all, who died and named the CDP God? In 2005, 60% of the surveyed companies answered. A number of large companies (Anadarko Petroleum, Apache, Chevron, Cinergy, DTE Energy, Duke Energy, First Energy, Ford Motor Company, General Electric, JP Morgan Chase, and Progress Energy) made such commitments as supporting mandatory limits on greenhouse gasses, voluntarily reducing their emissions, or disclosing climate risk information to investors.⁵²

Now well over 80 percent of the world’s largest companies complete the survey. Why the change? The threat of Sarbanes Oxley liability of shareholder action if a clearly played a role. But perhaps more significantly, the Carbon Disclosure Project represents institutional investors with assets of over \$55 trillion, now representing almost a third of all global institutional investor assets. Any company that might want to go to the capital markets would be advised to answer CDP’s questions.

The 2007 CDP report found that the world’s major companies are increasingly focused on climate change and that many see it as an opportunity for profit. Nearly 80% of respondents around the world considered climate change a commercial risk, citing extreme weather events and tightening government regulations. Some 82% said that they recognized commercial opportunities for existing or new products, such as investments in renewable energy. Globally, 76% said they had instituted targets and plans to reduce emissions. But only 29% of U.S. respondents had implemented greenhouse gas reduction programs with timelines and specific targets.⁵³

In 2008, Walmart hired the CDP to go to China to survey Walmart suppliers, asking them to report their carbon footprint if they wished to remain a supplier to the world’s largest retailer.⁵⁴

Walmart: Capitalism's 800 Pound Gorilla

The new wisdom that cutting a company's carbon footprint is simply better business is perhaps most convincingly demonstrated by the commitment of Walmart to implement more sustainable practices. In 2005 Walmart pledged:

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

In 2005, Lee Scott, then CEO of Walmart, announced goals to reduce energy use at Walmart stores 30 percent over three years, double the fleet efficiency of its vehicle fleet, build hybrid-electric long-haul trucks.⁵⁵ The company projects that this will save \$300 million each year by 2015. Installing a device that limits truck idling is already saving the company \$25 million each year.⁵⁶

In 2006, Walmart, announced goals to sell millions of compact fluorescent light bulbs (CFLs). Walmart realized that replacing the incandescent bulbs in its own ceiling fan displays with compact fluorescent bulbs throughout its 3,230 stores (10 models of ceiling fans on display, each with four bulbs, forty bulbs per store, 3,230 stores) could save the company \$7 million a year. Chuck Kerby, the Walmart employee who did the math, reflected, "That, for me, was an 'I got it' moment."⁵⁷ The company quickly realized that the same logic would benefit its customers, helping retain its image as the low cost store. It set out to sell 100 million CFLs in 2007 to save its customers \$3 billion.⁵⁸ The company calculates that this measure also saved enough electricity to run the city of Philadelphia.⁵⁹

Walmart, which if it were a country would be the 20th largest in the world, is not making such moves out of the goodness of its heart. In the two years after Walmart began its waste reduction program reducing unnecessary packaging by just five percent saved the company \$11 billion globally.⁶⁰ Walmart's goal of reducing overall packaging five percent by 2013 would be equal to removing 213,000 trucks from the road, saving about 324,000 tons of coal and 77 million gallons of diesel fuel per year.⁶¹

In October 2008, Walmart called its 1,000 largest Chinese suppliers to a meeting with representatives of the Chinese government, the carbon Disclosure Project and others. Walmart executives described a new set of aggressive goals the company has established to build a more environmentally and socially responsible global supply chain. They announced that the requirements would be phased in for all of its suppliers in China in 2009, and expanded to suppliers around the world by 2011.⁶²

The criteria required that the top 200 factories from which Walmart's sources its materials achieve a 20% improvement in energy efficiency by 2012. The company stated that by that date it would source 95% of its production from factories with the highest ratings in audits for environmental and social practices. It further revealed that Walmart China will design and open a new store prototype that uses 40 percent less energy.

Walmart was one of only two companies in the Dow Jones Industrial Average whose stock price rose in 2008—by 18 percent—and its sustainability efforts were credited, in part, with this performance.⁶³ When he announced the sustainability initiative, Walmart CEO Lee Scott observed that a corporate focus on reducing greenhouse gases as quickly as possible was just a good business strategy, stating, "It will save money for our customers, make us a more efficient business, and help position us to compete effectively in a carbon-constrained world."⁶⁴ In 2009, Reuters quoted the company's new CEO Mike Duke as saying that he wants to accelerate the sustainability efforts, saying, "I am very serious about it. This is not optional. It's not something of the past. This is all about the future."⁶⁵

In July 2009 Walmart rolled the comprehensive environmental and social scorecard out to its several thousand largest suppliers worldwide, asking them to complete an environmental scorecard relating to product packaging and waste reduction to improve product design and delivery.⁶⁶ Globally, Walmart has 60,000 to 90,000 suppliers, all of whom are now on notice that they will have to comply, as well.

Walmart is not the only company now requiring its supply chain to document more environmentally responsible practices. Hundreds of major European and American companies are establishing supplier codes of conduct and hiring third-party verifiers to audit their factories to ensure compliance with social

and environmental standards. As companies such as Walmart recognize that their survival depends on behaving in more sustainable ways, they are changing how the world does business.

Walmart has indicated that it will work with its suppliers to help them design more sustainable products to offer to its customers. Recognizing that lighting in its stores represented about a third of its electricity costs, the company formed a partnership with General Electric to innovate lower costs for light emitting diodes (LEDs). LEDs last longer, produce less heat, contain no mercury, and use significantly less energy than other types of lights. Over a three-year period Walmart invested about \$17 million in developing an LED lighting system for its refrigerator cases. Installing these bulbs in its coolers in more than 500 Walmart stores saved about \$3.8 million per year and reduced carbon dioxide emissions by 65 million pounds.

The real gain for the company, though, is the market that selling these bulbs represents. Lee Scott stated, "The greatest potential is in creating a new market for LED lighting. Tens of thousands of grocery stores and other retailers will be able to take advantage of this new technology. So multiply the cost savings. Multiply the savings in carbon dioxide emissions. And just think about the impact on our economy and the environment."⁶⁷

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Buildings – a Good Place to Start

If you run a company, where do you start? If you sell to Walmart, you had better get a copy of the Sustainability Index and begin figuring how to answer the questions. The first asks if you are measuring your carbon footprint? The second asks whether you are reporting it to the Carbon Disclosure Project?

If you are not a Walmart supplier, and, well, even if you are, one of the best places to start saving energy is in buildings. American buildings are responsible for 39 percent of total U.S. energy use, 70 percent of electricity use, 40 to 60 percent of greenhouse gas emissions, and 30 percent of waste output.⁶⁹ Ed Mazria, architect and founder of the Architecture 2030 Project states, "Seventy-six percent of the energy produced in this country goes just to operating buildings."⁷⁰ For all of this waste, buildings then generally have indoor air quality that's worse than outdoor air we claim to regulate. Yet it is possible to take any existing building and make it 3 to 4 fold more efficient, new ones 10 times as efficient, while making them work better and sometimes even cost less to build and certainly less to maintain.⁷¹

Pacific Gas and Electric, the largest utility on the North American continent, found that putting green features like day lighting into schools resulted in higher test scores.⁷² It's also one of the reasons that Walmart is going green. About a decade ago the company conducted an inadvertent controlled experiment. Setting out to build a green building, they got halfway through, lost interest, and wound up with a building that had a green half and a not so green half. Surprise, the green side posted 40 percent higher retail sales and all the associates wanted to work there.⁷³ Walmart now has an excellent green building department.

Implementing cost-effective energy efficiency in buildings also increases labour productivity 6 to 16 percent.⁷⁴ Doing this throughout the economy would add over \$200 billion per year to American GNP.⁷⁵ It would also eliminate \$58 billion now lost in sick time.⁷⁶

These measures have a far greater return on investment (ROI) than any other use of the money. For example, changing out inefficient incandescent bulbs with high quality compact fluorescents delivers greater than 40 percent annual ROI. The return on investment for common stocks, might achieve 1.5 percent, a money market account gives 3.5 if you commit the money for a long term. Compare this to a 40 percent or greater ROI from duct sealing, or a 30 percent ROI from programmable thermostats. Even the lower ROI energy efficiency investments such as increasing wall or attic insulation come in at twice the return on a 30 year bond.⁷⁷ Saving energy is simply the best investment you can make. If you have money, and you're not investing in increasing the efficiency of your home, your office, the buildings in your community, you are simply throwing away your money.

The Impact on Communities

Such investments improve the overall well being of our communities, as well. Typical communities are bleeding to death trying to buy energy, typically fossil energy, from outside. Twenty percent of gross income goes out of a community to buy imported energy, 80 percent of those dollars never return. This is reverse economic development.

We're like someone who wants to take a bath, but the water keeps running out, so people are trying to sell us bigger water heaters. We don't need a bigger water heater whether it be a nuclear or a coal one, we need a plug.

A man named Wes Birdsall invented one. The general manager of the Osage Iowa Municipal Utility, Birdsall helped his customers use less of his product by helping them plug energy leaks in their houses. Birdsall realized that his customers didn't want Kilowatt hours of electricity, what most electric utilities believe they are in business to produce. Birdsall realized that his customers only were using raw kilowatt□hours of electricity to obtain the energy "services" of comfort in their homes, humming machines in factories, illumination, and the other services that they really wanted: cold beer, hot showers, industrial shaft power.

Birdsall understood that building a new coal plant, the proposed way to meet increasing customer demands, would increase rates. If, instead, he could help people can get the same or improved service more cheaply using efficiency, they will jump at it. By meeting customers' desires for energy services at lower cost, Birdsall began one of the most remarkable economic development stories in rural America.

The Osage program reduced electric bills to half the state average and unemployment to half the national average, because lower rates attracted new factories came to town. New factories increased demand, so Birdsall implemented more efficiency, holding electric growth level for years. The program was profiled in the Wall Street Journal, and replicated by other utilities. Birdsall's work saved over a million dollars a year in a town of 3,800 people, generating over 100 new jobs. According to a USDA study of Osage, "The local business people calculated that every \$1 spent on ordinary consumer goods in local stores generated \$1.90 of economic activity in the town's economy. By comparison, petroleum products generated a multiplier of \$1.51; utility services, \$1.66; and energy efficiency, \$2.23. Moreover, the town was able to attract desirable industries because of the reduced energy operating costs resulting from efficiency measures put in place. Energy efficiency has a long and successful track record in Osage as a key economic development strategy."⁷⁸

A report on the program found that "Industries are expanding and choosing to remain in Osage because they can make money through employees who are highly productive and through utility rates that are considerably lower than neighboring cities."⁷⁹

Community leaders agree. Over 1,000 American Mayors pledged their cities to meet the goals set forth in the Kyoto Protocol or reduce their emissions of greenhouse gasses by at least 7% by 2012.⁸⁰ Some have already met even more aggressive targets, ranging from a goal of 20% reduction by Portland to a goal of 42% reduction over the same time frame by Sebastopol, California.⁸¹ Communities that are implementing climate protection programs are finding that smart, comprehensive approaches to climate planning make them more competitive and put hundreds of billions of dollars back into the economy from savings.

Programs to help buildings use less energy and encourage the use of efficient cars, appliances and machines stimulate new manufacturing ventures, increase farm income, and generate increased community income. A local government Commissioner from Portland, Oregon, stated, "We've found that our climate change policies have been the best economic development strategy we've ever had. Not only are we saving billions of dollars on energy, we are also generating hundreds of new sustainable enterprises as a result."

A 2003 study of the impact of energy efficiency and renewables in Oregon found that one average megawatt saved increases:

- annual economic output in Oregon by \$2,230,572.
- wage income in Oregon by \$684,536 and
- business income by \$125,882.

Each average megawatt saved creates 22 new jobs in Oregon. The study found that over 12 megawatts were saved as a result of Energy Trust program activities in 2002, with the number growing to 125 average megawatts by 2006. 82

In 2008 over a seven-month period, the City of San Francisco created 180 new jobs by enabling 640 residents and enterprises to install 2 MW in small rooftop solar electric systems. Workforce trainees filled 83% of the jobs. The City's SF Energy Watch helped 1,500 businesses and multifamily properties save over \$5.7 million in energy bills, delivering 6 megawatts of energy efficiency savings.83

Small businesses are the economic engine of the country and generate more than half of non-farm private gross domestic product. They represent 99.7 percent of all employer firms, employing nearly 60 million workers, about half of all private employees. For the past decade they have generated 60 to 80 percent of net new jobs each year. Small businesses consume half the electricity in the country, but only about a third have invested in energy efficiency. Less than half of the small business owners are aware that the EPA's Energy Star program can help them lower their energy usage. The Agency expends just one million dollars and two staff positions on its programs to get information to millions of small businesses.84

Natural Capitalism Solution's web-based learning tool, Solutions at the Speed of Business shows small businesses how they can benefit from programs to reduce carbon emissions. They can cut their own costs, and increase sales to others who are implementing emissions reduction programs. For example a Remax real estate office in Florida, implemented a weatherization program, caulking windows, and weather stripping doors. These simple measures cut their need for air-conditioning and put \$7,900 of savings into their pocket the first year.85

As Business Week noted, such program not only cut direct energy, but drive prosperity throughout the economy: "reducing energy waste in U.S. homes, shops, offices, and other buildings must, of necessity, rely on tens of thousands of small concerns that design, make, sell, install, and service energy-efficient appliances, lighting products, heating, air-conditioning, and other equipment. Small businesses can also save as much as 20-30 percent on their own energy bills by making their own workplace more energy-efficient." 86

Add it up – the impact on the states

Studies have assessed the larger economic impact. In Florida, the Republican Governor, commissioned a Republican task force to look at what it would cost the state to implement measures to cut greenhouse gas emissions. Perhaps he'd been reading the Sports Illustrated swimsuit edition that depicted a Marlin's baseball player standing up to his waist in water. Under the most optimistic projections of climate change, much of Florida floods. Governor Crist wanted to know what it would cost to prevent this.

He was surprised to find that implementing aggressive measures to reduce Florida's carbon footprint would add \$28 billion to the state economy between now and 2025.87

In the world's sixth largest economy, Californians have held their energy consumption to zero growth since 1974 while national per capita energy consumption grew 50%. This has enabled the average family there to pay about \$800 less for energy each year than had the state not pursued energy efficiency.88 In 2004, California ranked 12th in the nation in energy prices, but only 45th in energy costs per person.89 A 2008 Study by the University of California found that California's programs to reduce energy dependence and increase energy productivity three decades ago directed a greater percentage of its consumption to in-state, employment-intensive goods and services whose supply chains largely reside within the state. This created a strong "multiplier" effect of job creation, generating 1.5 million FTE jobs with a total payroll of over \$45 billion, saving California consumers over \$56 billion in energy costs.

Similarly, a study, conducted by the University of California, found that California's programs to reduce energy dependence and increase energy productivity three decades ago directed a greater percentage of its consumption to in-state, employment-intensive goods and services whose supply chains largely reside within the state. This created a strong "multiplier" effect of job creation, generating 1.5 million

FTE jobs with a total payroll of over \$45 billion, saving California consumers over \$56 billion in energy costs. Going forward, achieving 100% of the greenhouse gas emission reduction targets mandated by AB 32, the legislation that the Republican Governor Schwarzenegger championed to reduce carbon emissions 80 percent by 2050, would increase the Gross State Product by \$76 billion, increase real household incomes by \$48 million, and create as many as 403,000 new efficiency and climate action jobs.⁹⁰

This should not come as a surprise to Californians. They've done it before. In 1989, the voters in Sacramento, California, shut down the city utility's 1,000-megawatt nuclear plant. Rather than invest in a new conventional centralized fossil fuel plant, the local utility met its citizens' needs through energy efficiency and renewable energy, including wind, solar, biofuels and distributed technologies like cogeneration and fuel cells. In 2000, an econometric study showed that the program had increased the regional economic health by over \$180 million, compared to just running the existing nuclear plant.⁹¹ The utility was able to hold rates level for a decade, retaining 2,000 jobs in factories that would have been lost under the 80% increase in rates that just operating the power plant would have caused. The program generated 880 new jobs, and enabled the utility to pay off all of its debt.

The town of Braddock, Pennsylvania, went from 20,000 people to 2,000. A rustbelt town outside of Pittsburgh, the mayor said we're not going die, we're going to go green. They are recruiting companies making renewable energy, they are growing organic vegetables on the vacant lots to sell to high end restaurants in Pittsburgh, and they are growing feedstock for biofuels on vacant lots, thereby keeping in business a third-generation, 100 year old oil company in town. They're rebuilding their town using renewable energy.⁹²

In Colorado, over the last 10 years, more new jobs have been created in the clean tech sector, than all other sectors in the state combined.⁹³ In 2008 green industries generated 8.5 million jobs and over a trillion dollars in revenues. By 2030, this is predicted to rise to at least 40 million jobs.⁹⁴

A 2006 study by the University of California Berkeley⁹⁵ found that jobs in the fossil-fuel industry have been steadily declining for reasons that "have little to do with environmental regulation," such as mechanization and mergers. Although U.S. coal production increased 32% between 1980 and 1999, coal-mining employment decreased 66%, from 242,000 to 83,000 workers. The report found that while some sectors would lose jobs, policy interventions can minimize the impact of a transition,⁹⁶ and that the clean energy sector produces ten times as many jobs per megawatt of power installed, per unit of energy produced, and per dollar of investment, than the fossil fuel sector.⁹⁷

Twenty U.S. states, representing over two thirds of the United States economy and population, are implementing comprehensive, multi-sector greenhouse gas reduction plans. Such programs will expand employment, income and investment, contribute to national economic recovery, while achieving net savings of at least \$85 billion in 2020; and from 2009 to 2020 cumulative savings of \$535.5 billion. The programs will also deliver such co-benefits as energy independence, enhanced health and environmental protection.⁹⁸

This is not a Red or a Blue issue. R. James Woolsey, who used to run the CIA, drives a plug in hybrid car, which he powers from the solar panels on his roof. It has a bumper sticker on the back that says, "Osama Bin Laden hates my car." He sees this as a national security issue.

New Energy Supply

The transition away from fossil fuels to the energy system of the future can actually happen fairly rapidly. In 2008, the wind industry added 17 gigawatts of new wind capacity around the world.⁹⁹ A gigawatt is roughly the amount of electricity produced by a nuclear power plant. Did you notice? If we had built 17 nuclear plants, you would have noticed.

There are people claiming that nuclear power is necessary to displace coal and slow global warming. Such people forget a few facts. A recent study by Craig Severance, retired utility commission staff, found that new nuclear plants will cost 25¢ - 30¢ per kilowatt hour of power produced (¢/kWh). Changing out inefficient light bulbs costs half a cent per kWh.¹⁰⁰ Wind in good sites can cost as little as 3¢/kWh, solar as low as 12¢/kWh. Nuclear is simply too expensive.¹⁰¹

Nuclear is too slow. If Dr. Hanson is correct we need to act in the next couple of years. It takes 10 years or more to bring a nuclear plant on line, once all of the permits have been secured. The Chinese can do it in four, but in the U.S. the only units now under construction have already cost over \$17 billion and are well behind schedule.¹⁰²

Replacing all of the coal plants around the world with nuclear would make it impossible to prevent any country that wanted them (or any serious sub-national group like al Qaida to obtain nuclear bombs. Not a nice prospect

Nuclear requires large amounts of water to cool the plants. During droughts, likely to become more common nuclear plants may have to shut down.

There remains no technical solution for the waste.

Perhaps most disturbing, nuclear power, because it is so dangerous, requires a technological priesthood to look after the technology. This is profoundly undemocratic.

Oh, yes, and an accident anywhere in the world would shut the entire industry.... Oops....

This is not an encouraging litany for a technology that has cost American taxpayers more than the Vietnam war and the space program combined and now delivers to us about as much energy as wood.

There are far better ways to meet whatever needs for energy remain, after we've done the cost effective efficiency improvements. The renewable forms of energy can deliver all of the energy that a dynamic industrial society requires, and the marginal investments in them are better buys than building any more of the sunset industries like coal or nuclear. In good sites, wind power actually costs less than just running an existing coal plant. Almost any decent site will deliver wind power at less than building a new coal plant. As a result utilities have cancelled well over 100 proposed new coal plants across the U.S. Some utility commissions have even ruled that a coal plant is no longer the cheapest power, wind is.¹⁰³ (Of course efficiency is even cheaper, still.)

Solar power is now the world's fastest growing form of energy supply, is nearing competitiveness with coal and is already cheaper than nuclear. Southern California independent power producers were building a megawatt a week, prior to the economic collapse.¹⁰⁴ Southern California Edison built a 250 megawatt power plant on roofs spread around the county at a price point, \$875 million, that is eerily close to the cost of a coal plant that was recently cancelled up in Montana, which would have cost \$800 million.¹⁰⁵ This means that solar electricity, one of the more expensive of the renewable forms of energy, is coming very close to the cost of producing energy using dirty dangerous coal.

In 2007, the U.S renewable energy and energy efficiency industries generated over a trillion dollars in sales and created over 9 million jobs, representing substantially more than the combined 2007 sales of the three largest U.S. corporations – Wal-Mart, ExxonMobil, and GM (\$905 billion). If the federal stimulus policies are implemented, these industries could generate over 37 million jobs per year in the U.S. by 2030.¹⁰⁶

But at present, American energy policy (more practiced by its absence) is allowing leadership in renewable power to go elsewhere. For years the dominant solar country was not the American Southwest, but cold and cloudy Germany, where the renewables industry was adding more jobs than all other German industries combined. The Germans put in place a national policy that paid anyone who produced renewable energy an attractive and predictable price for their power.¹⁰⁷ As a result wind turbines sprouted on the approach to Munich, whole villages became entirely renewably powered¹⁰⁸ and the German solar market continues to grow at over 25 percent a year.¹⁰⁹ German renewable energy now delivers over 12 percent of all German electricity.¹¹⁰ Germany is now the first nation in the world to entirely power its Parliament with renewable energy, and plans to become the world's first industrial power to use 100 percent renewable energy. At current rates it could reach that green goal by 2050, generating 800,000 to 900,000 new cleantech jobs by 2030 as it does so.¹¹¹

The Germans are not alone. Denmark aims to get 60% of its energy from renewables by 2010. Japan was first-to-market with hybrid vehicles, enabling Toyota to surpass General Motors as the world largest car company in 2008. It expects hybrid vehicles to rise from 6% of its U.S. vehicle sales in 2005 to 20% by

Calling climate change “one of the most pressing global challenges,” venture capitalist John Doerr predicted that the resulting demand for innovation would create the “mother of all markets.”¹¹³ Investment in renewable energy projects market could reach \$50 billion by 2011, with double-digit annual growth rates.¹¹⁴ The United Nations described “A gold rush of new investment into renewable power.” concluding that clean energy could provide almost a quarter of the world's electricity by 2030.¹¹⁵ The European Renewable Energy Council (EREC) was even more optimistic, claiming that 50% of the world's energy supply can come from renewable energy sources by 2040.¹¹⁶

Business success and national stature in a time of technological transformation demands innovation. Since the First Industrial Revolution, there have been at least six waves of innovation, each shifting the technologies underpinning economic prosperity, political influence and military domination in the world. In the late 1700s textiles, iron mongering, water-power, and mechanization enabled modern commerce to develop in Britain.

The second wave of innovation, also British, saw the introduction of steam power, trains and steel. In the mid 1800s oil was discovered in the United States. By the 1900s, electricity, chemicals and cars began to dominate. America came to rule the world, militarily, politically and economically. German and Japanese industrial machines sought to challenge American dominance, but Yankee ingenuity prevailed. By the middle of the century it was petrochemicals, and the space race, along with electronics. The Soviets challenged, but American innovation and entrepreneurial excellence won out. The most recent wave of innovation has been the introduction of computers, iPods and the rest of the digital or information age.

If the planet is to survive, the next wave of innovation will surely center on clean technology, the transition to more sustainable ways of manufacturing the products, and delivering the services that humans desire. As the industrial revolution plays out and economies move beyond iPods, older industries will suffer dislocations, unless they join the increasing number of companies implementing the array of sustainable technologies that will make up the next wave of innovation.¹¹⁷

The U.S. is still debating whether to require power companies and other to generate more electricity from renewable sources. China already has already done so and is investing hundreds of billions of dollars to make itself the green energy superpower.¹¹⁸ The China Greentech Initiative reported in September 2009 that China's market for energy efficiency, renewable energy and other green technology could become a trillion dollar market by 2013.¹¹⁹ The report cites “the fast pace of renewables growth as one example – wind capacity has doubled every year for the last four years to reach 12.2 gigawatts in 2008 and one in 10 households has a solar water heater installed. The government has a target of deriving 20% of energy from renewable sources by 2020.”

China broke ground in 2009 on what will be the world's largest and cheapest wind farm, delivering 20 gigawatts and perhaps twice that. Delivering five gigawatts by 2010, the facility will reach 20 gigawatts by 2020, and another six wind farms are planned, each on a similar scale.¹²⁰ China will surpass the United States as a wind power in 2010, and could well have 30 gigawatts of wind power installed by year's end, investing \$440 to \$660 billion in solar and wind power over the next 10 years. ¹²¹

Tom Friedman in article after article warns of the loss of American competitiveness if we let China go this way unchallenged. In an article harking back to the space race¹²² he writes:

China's leaders, mostly engineers, wasted little time debating global warming. They know the Tibetan glaciers that feed their major rivers are melting. But they also know that even if climate change were a hoax, the demand for clean, renewable power is going to soar as we add an estimated 2.5 billion people to the planet by 2050, many of whom will want to live high-energy lifestyles. In that world, E.T. — or energy technology — will be as big as I.T., and China intends to be a big E.T. player....

China's going clean-tech. The view of China in the U.S. Congress — that China is going to try to leapfrog us by out-polluting us — is out of date. It's going to try to out-green us. Right now, China is focused on low-cost manufacturing of solar, wind and batteries and building the world's biggest market for these products.

“If they invest in 21st-century technologies and we invest in 20th-century technologies, they’ll win,” says David Sandalow, the assistant secretary of energy for policy. “If we both invest in 21st-century technologies, challenging each other, we all win.”

Unfortunately, we’re still not racing. It’s like Sputnik went up and we think it’s just a shooting star. Instead of a strategic response, too many of our politicians are still trapped in their own dumb-as-we-wanna-be bubble, where we’re always No. 1, and where the U.S. Chamber of Commerce, having sold its soul to the old coal and oil industries, uses its influence to prevent Congress from passing legislation to really spur renewables.¹²³

In a prior article titled, “Have a Nice Day,” Friedman railed that solar panel fabrication manufacturer, Applied Materials, a U.S. company is opening 14 new panel manufacturing plants, none in America. Friedman writes, “Let’s see: five are in Germany, four are in China, one is in Spain, one is in India, one is in Italy, one is in Taiwan and one is even in Abu Dhabi. I suggested a new company motto for Applied Materials’ solar business: “Invented here, sold there.” He continues:

If we want to launch a solar industry here, big-time, we need to offer the kind of long-term certainty that Germany does or impose the national requirement on our utilities to generate solar power as China does or have the government build giant solar farms, the way it built the Hoover Dam, and sell the electricity.

O.K., so you don’t believe global warming is real. I do, but let’s assume it’s not. Here is what is indisputable: The world is on track to add another 2.5 billion people by 2050, and many will be aspiring to live American-like, high-energy lifestyles. In such a world, renewable energy — where the variable cost of your fuel, sun or wind, is zero — will be in huge demand.

China now understands that. It no longer believes it can pollute its way to prosperity because it would choke to death. That is the most important shift in the world in the last 18 months. China has decided that clean-tech is going to be the next great global industry and is now creating a massive domestic market for solar and wind, which will give it a great export platform.

In October, Applied will be opening the world’s largest solar research center — in Xian, China. Gotta go where the customers are. So, if you like importing oil from Saudi Arabia, you’re going to love importing solar panels from China.

Have a nice day. ¹²⁴

The Business Case The Integrated Bottom Line

And then you get the inevitable question: “Ah, but is there a business case...?”

Yes. In fact the business case for acting to protect the climate, to make the transition to more sustainable business, is now so robust that you ignore it at your peril.

Despite overwhelming evidence to the contrary, many people believe that implementing climate protection, energy efficiency, renewable energy and any form of environmental protection is costly to business. They reach this conclusion in part because of a well-coordinated campaign run by the fossil fuel industries that alleges this.¹²⁵ watching the results of an approach called the triple bottom line, great idea when John Elkington first introduced it. It turned out I think to be a dead end concept because you are asked as a businessperson to bolt people and planet onto your profit, and they become cost centres, hmm, not very attractive.

Companies around the world are recognizing that drivers of change like global warming will require that they shift how they do business. They are also recognizing a related driver that has been called, “The Sustainability Imperative.” This is the discovery that companies that behave more responsibly to people and to the planet cut their costs, are a better investment risk, and enhance all aspects of shareholder value. Over the past decade, more than a dozen studies have shown that companies that focus on and

implement sustainability programs achieve greater profitability than their industry peers. (See Appendix for the list of such studies.) Actions taken to make a company more sustainable also make it less exposed to value erosion, and strengthen every aspect of business value.

Shareholder value is enhanced when a company cuts its costs, as DuPont did, maintaining profitability because it was committed to squeezing out waste. A company that grows its top-line sales through innovation, as ST Microelectronics did, captures superior market advantage. As the Investor Network on Climate Risk as shown, responsible management of a company's carbon footprint enables it to secure better access to capital from the socially responsible investment community, and better manages its risks. Cutting carbon emissions in buildings enhances labor productivity, and increases a company's ability to attract and retain the best talent, and improves creativity and morale in the workplace.

A corporate commitment to use energy more efficiently, to cut its carbon footprint and to act to protect the climate strengthens every aspect of core business value and shareholder equity. This Integrated Bottom Line approach¹²⁶ shows that companies that implement sustainability programs not only reduce expenses now, but also position themselves for better long-term performance, better manage their supply chains and stakeholders. Such businesses enjoy enhanced government relations, reputation and brand equity.¹²⁷ Over time, a commitment to behave more sustainably enhances core business value by delivering sector performance leadership and first-mover advantage. The companies that get it right will be first to the future; we're talking about the billionaires of tomorrow. Bob Willard in the book, *The Sustainability Advantage*, put real numbers to the value of counting just seven of the 13 or more aspects of the Integrated Bottom Line. His results show an increase in profitability of 38 percent from implementing sustainability in a company.

These conclusions are borne out by the 2007 report from Goldman Sachs,¹²⁸ showing that companies that are leaders in environmental, social and good governance policies outperformed the MSCI world index of stocks by 25 percent since 2005. Seventy two percent of the companies on the list outperformed industry peers, were financially healthier, and achieved enduring value.¹²⁹ A study by the Economist Intelligence Unit repeated these findings, and found, further, that the worst performing companies in the economy were most likely to have nobody in charge of sustainability.

Even in the economic collapse, companies that make a serious commitment to behave in more sustainable ways fared better than their peers in the same industry. From 2006 through 2007 companies on the Dow Jones Sustainability World Index performed 10 points above the S&P 500.¹³⁰

In 2009, A.T. Kearney released the findings of their report, *Green Winners*,¹³¹ comparing the economic performance of companies with a commitment to sustainability to companies in the same industry without such a sustainability commitment. The report tracked the stock price performance over six months prior to November 2008 of 99 firms on Dow Jones Sustainability Index and the Goldman Sachs list of green companies. The results from the report showed that in 16 out of the 18 industries evaluated, businesses deemed "sustainability focused" outperformed industry peers over three- and six-month periods and were "well protected from value erosion." In the study period of three months the differential between the companies with and without a commitment to sustainability was ten percent and over six months the differential was 15 percent. "This performance differential," the Report stated, "translates to an average of \$650 million in market capitalization per company."¹³²

In 2009 a study of European companies by ATOS consulting, stated, "There is a strong business case for environmental excellence. Companies with more mature sustainability programs enjoy higher profit..."¹³³

Leadership for a world that works

There remains a very important role for Government. We've been under a campaign, the last 8 years or so, to de-legitimize the role of Government. It's like a bad light bulb joke. How many economists does it take to screw in a more efficient light bulb? None, the free market will do it. Markets make very good servants, they're not such a good master, they're a lousy religion. There's a very important role for communities of faith. Go back and read Alan Smith; all markets do is allocate scarce resources efficiently in the short term. Markets were never intended to take care of grandchildren. That's our job. That's the job of a free people coming together and saying; what kind of a world do we want to leave?

What will our legacy be? Ray Anderson is fond of saying, when you meet your maker, what will your conversation be? Will it be last quarter's share price? I don't think so. We need leadership. And I rather like this line from Lord of the Rings, where Gandalf said "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 steward, did you not know?"

Not a bad maxim of leadership. It doesn't matter if you're the head of Walmart, or an elected official. Gandalf said, "The rule of no realm is mine...."

And remember? In the book it was the fun loving unassuming little hobbits, who liked their second breakfasts who took on their shoulder the awesome task of meeting the challenges that threatened the world.

They were scared and they didn't know where they were going. But in the end, all the kings and warriors and wizards could just stand by as the little people saved the world.

Real leadership is extraordinary courage by ordinary people.

This little blue marble hung in space is the only place in all the universe we know of where there is life. Will we choose to protect it?

Conclusion

Companies will implement more sustainable processes and procedures or they will risk losing competitiveness in a world that can no longer tolerate unsustainable behaviour. A 2009 article in Harvard Business Review concluded, "Sustainability isn't the burden on bottom lines that many executives believe it to be. In fact, becoming environment□friendly can lower your costs and increase your revenues. That's why sustainability should be a touchstone for all innovation. In the future, only companies that make sustainability a goal will achieve competitive advantage. That means rethinking business models as well as products, technologies and processes."134

Acting to protect the climate can unleash a new energy economy creating the greatest prosperity ever in history. If we fail to act, it will represent the greatest market failure ever in history.

Business□as□usual is changing. The economic collapse of 2008□2009 had many well□discussed causes, but it stemmed from the fundamental unsustainability, not only of the global financial system, but of the entire way business is conducted across the globe. Overcoming the financial crisis, avoiding the next collapse, and creating a society in which all people can prosper will require rethinking how industry is conducted.

If the world wishes to overcome the financial crisis, avoid the next collapse, and lift its people out of poverty, the way business is done must change. Reducing environmental damage and restoring intact ecosystems is the essential basis if we are to create future prosperity. Businesses and governments can either drive change in ways that allow companies and economies to flourish or they will be forced respond to resultant crises and hope for the best.

The global collapse of 2008□2009 showed the folly of that approach. The challenges facing modern industry go far beyond the usual task of ensuring sufficient cash flow to stay in business. They pose systemic challenges that will alter most everything about the world in which business is done. They will shift how essentially everything is made and delivered.

This is in part because the economic collapse of 2008□2009 is the tip of a much larger iceberg. Even if nations could roll back the clock to early 2008 and act differently given foreknowledge of what was to come, the forces that drove the collapse would have to be overcome before the world could choose a course that would not inevitably lead to collapse.

If the massive stimulus packages now being rushed to the market are "successful," and the economy returns to the boom days of the early 21st century, challenges like climate change will inexorably just force the system into the next collapse. This paper describes how some business are prospering as they make the transition to genuine sustainability.

Will you join them

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