Climate Capitalism

Capitalism

in the

Age of

Climate Change

L. Hunter Lovins and Boyd Cohen

Hill and Wang

A division of Farrar, Straus and Giroux New York

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A division of Farrar, Straus and Giroux
18 West 18th Street, New York 10011

Distributed in Canada by D&M Publishers, Inc.
Printed in the United States of America
First edition, 2011

The graph on page 254 is from *From Risk to Opportunity: Insurer Responses to Climate Change* by Evan Mills, Ph.D., report for Ceres, April 2009. Reprinted with permission.

Library of Congress Cataloging-in-Publication Data
Lovins, L. Hunter, 1950–
Climate capitalism : capitalism in the age of climate change / L. Hunter Lovins and Boyd Cohen.
p. cm.
Includes bibliographical references and index.
ISBN 978-0-8090-3473-4 (hbk. : alk. paper)
1. Sustainable development—Environmental aspects. 2. Entrepreneurship—Environmental aspects. 3. Capitalism—Environmental aspects. 4. Climatic changes—Economic aspects. 5. Environmental policy—Economic aspects. I. Cohen, Boyd. II. Title.

HC79.E5.L67 2011
338.9'27—dc22

2011003809

Designed by Abby Kagan

www.fsgbooks.com

1 3 5 7 9 10 8 6 4 2

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A Future That Works

The 2008 financial collapse that evaporated $50 trillion in assets worldwide caught almost everyone by surprise, but not Nessim Taleb. The author of the bestselling *The Black Swan: The Impact of the Highly Improbable*, Taleb accurately predicted the timing and causes of the economic meltdown. He did so not because his crystal ball is better than everyone else's, but because he pays attention to low-probability, high-consequence events ("black swans")—events that, he believes, are on the increase.

And they are changing everything.

Future winners, Taleb suggests, will be those who are prepared to accept that such events can and indeed will happen, and then expose themselves to the information that will allow them aggressively to exploit them. He's talking about climate capitalists.

Conventional wisdom says that acting to protect the climate will be very costly. It holds that the world can't possibly afford it, particularly in a down economy. This book has shown that the contrary is true: those who embrace Climate Capitalism are on the most dependable route to prosperity, now and in the coming decades.

Business as Usual Isn't Safe Anymore

Business as usual will not endure, and it would be a recipe for disaster if it did.[1] Conventional best practices are no longer sufficient to deal with the challenges facing the world.[2] The fact that many of the world's major ecosystems are tipping into collapse; the advent of peak oil chronicled in chapter 6; the looming food shortages outlined in chapter 7; the water crises described in chapter 9—these drivers of change mean that business as usual is no longer a safe place to be.[3] The Sustainability Imperative—the recognition that doing business in ways that are better for people and the planet is more profitable—is the climate capitalists' prime directive. It will also mean that success will go to the nimble.

Consider just a few of the surprises that occurred during six months in 2010:

- The BP oil spill devastated the Gulf of Mexico's environment and economy and now threatens the company's survival. Then a second Gulf oil rig blew.
- A "flash crash," caused the Dow Jones Industrial Average to lose 999 points in a single half hour.
- The Greek economic collapse threatened the economies of Portugal, Ireland, Italy, and Spain, and underscored the weaknesses of the Eurozone. All are dwarfed by the de facto bankruptcy of California, the eighth largest economy in the world.
- 2010 became the hottest year on record with nineteen countries posting all-time temperature records; Pakistan recorded temperatures of 129 degrees, setting the record for Asia, shortly before suffering the worst flooding in its history. Both firsts threatened the economic stability of the country.
- In May Pakistan test-fired two nuclear-capable missiles, as did India six months later.
- Russia suffered a heat wave that precipitated massive fires and so reduced its wheat crop that the country, Europe's breadbasket, banned exports, hiking food prices globally.

None of these events should have surprised anyone, but they all did.

Perhaps the biggest surprise is that despite overwhelming evidence, climate change became taboo, banished by economic fears and wedge politics, as political panderers labeled it a hoax. The discredited environment-versus-jobs arguments suddenly found a second life as Republican talking points, and Democrats, too cowed to respond, gave up the fight. Unless human-caused emissions of greenhouse gases, now higher than at any time in human existence, are immediately reduced, however, we'll lose a lot more than savings and jobs. A 2009 report by the International Institute for Environment and Development found that adapting to climate change will cost the world $1.5 trillion every year—two to three times prior estimates ($1,240 trillion in 2010 dollars). And that is if the world can hold CO_2 concentrations to no higher than 450 parts per million.[4] Business as usual will deliver concentrations approaching 850 parts per million or more.

Dr. Rajendra Pachauri, chairman of the UN's Intergovernmental Panel on Climate Change (IPCC), told an international gathering of representatives 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. We are risking the ability of the human race to survive."[5] The 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."[6]

Climate chaos is not a future threat. It is real and already causing misery around the globe. Left unchecked, it will get far worse. The evidence is everywhere around us. Devastating fires sweep across not only Russia, but Australia, Greece, Spain, and the western United States. Droughts cripple agriculture in Russia, India, China, Africa, and California. The drastic melt-off of glaciers in Greenland and the polar regions threatens to raise sea levels at the same time that the loss of glaciers in the Himalayas will restrict water access to 40 percent of people on earth, from China to India.[7] Disappearing sources of water could affect 1.8 billion more people by 2080.[8] Heat waves across the globe devastate grain crops and worsen outbreaks of diseases. At the same time, major storms have increased, causing floods from Pakistan to China to Europe

to the southeastern and midwestern United States. Hurricanes sweep the Caribbean and Latin America, as cyclones batter the Philippines and Burma. Even the genocide raging in Darfur has been recognized by the UN to be the result of the forty-year drought caused by the warming climate.[9] The United Nations Development Programme warns that agricultural systems will begin to fail owing to increasingly variable weather patterns, leaving large numbers of people facing malnutrition.[10] The Global Humanitarian Forum reports, "Already today, hundreds of thousands of lives are lost every year due to climate change. This will rise to roughly half a million in 20 years . . . Climate change is already responsible for forcing some fifty million additional people to go hungry and driving over ten million additional people into extreme poverty."[11]

Left unchecked, climate change will overwhelm most nations' abilities to cope. The worst effects are already being felt by people who had the least to do with causing the problem—underscoring the moral urgency for action by the industrialized nations whose economic activities have caused the crisis.[12]

Climate Chaos Is Now Scientifically Undeniable

In March 2009 the International Alliance of Research Universities' scientific congress in Copenhagen reviewed and updated the state of global climate science that underpinned previous Intergovernmental Panel on Climate Change reports. Many of the 2,500 researchers in attendance had contributed to the IPCC reports. Participants from nearly eighty different countries gave more than 1,400 scientific presentations.[13] In its "Synthesis Report" the congress concluded, "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." The solutions called for were "rapid, sustained, and effective mitigation based on coordinated global and regional action."[14]

In light of this and similar science from around the world, the NASA scientist Dr. James Hansen advises, "Don't ask what's possible; ask what's

necessary."[15] What's necessary, he has been warning for several years, is reducing the concentration of CO_2 in the atmosphere to at most 350 parts per million. That is the upper "safe" limit. Sustained concentrations of CO_2 over that, he argues, are not "compatible with the planet on which civilization developed and to which life on earth is adapted."[16]

But CO_2 concentrations in the atmosphere were at 392 ppm in September 2010,[17] well beyond the 350 level that leading scientists believe is "safe." And by "safe" they mean that humanity has a fifty-fifty chance of avoiding climate catastrophe. If a friend told you, "Come drive with me, there's a fifty-fifty chance we'll get into a fatal car wreck," you'd get into another car. Even at 350 ppm, the world would still be well above the historic level of CO_2 concentration, 280 parts per million, under which the earth's ecosystems evolved.[18] And even if the world stopped burning fossil fuels today, concentrations and warming would go up for a while because of time lags in the system.[19] Perhaps worse, an internal briefing paper produced by the UN Framework Convention on Climate Change at the Copenhagen climate negotiations in December 2009 showed that even the most ambitious emissions reduction targets currently offered by developed and developing countries, including the European Union nations and the United States, would set the world on course for warming of around 5.4° Fahrenheit (3° Celsius).[20]

Despite efforts by climate deniers to confuse the public, the overwhelming scientific consensus is 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.[21] 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."[22]

What We're Up Against

In his 2001 book, *Eco-Economy: Building an Economy for the Earth*, Lester Brown quoted Øystein Dahle, former Exxon vice president for Norway and the North Sea, who said, "Socialism collapsed because it did not

allow the market to tell the economic truth. Capitalism may collapse because it does not allow the market to tell the ecological truth."[23]

The Nobel Prize–winning economist Joseph Stiglitz pointed out that financial allocations are driven by market signals. But these signals are distorted because the nations of the world "price" many of the world's priceless resources (a stable climate, or the pollution that endangers it) at zero. "Not surprisingly, this has led to inefficient outcomes, with emissions levels too high and too little effort devoted to energy conservation and research," he says. He echoes essentially all other economic observers when he writes, "Providing a strong, stable carbon price is the single policy action that is likely to have the biggest effect in improving economic efficiency and tackling the climate crisis."[24]

The business-as-usual crowd would prefer that we continue the practice of what Randy Hayes, director of the World Future Council's U.S. Liaison Office, calls "cheater capitalism." The chief apologist for this approach to business was the economist Milton Friedman. Friedman extolled the belief that the job of a corporate executive was simply to look after the profitability of his enterprise. Issues of the larger world belonged to the realm of policy, he argued, ignoring the fact that corporations influence that, too, with fleets of lobbyists. The former CEO of General Electric Jack Welch echoed that the only social responsibility of business is to create jobs and shareholder value.[25] These icons of twentieth-century business wrote in cavalier disregard of the fact that this way of doing business has brought the global economy and the world to the edge of a crumbling cliff. The ground that companies and communities, very much including you and me, stand on, which the world has long taken for granted, is collapsing. The global climate crisis, high and rising energy prices, the loss of ecosystems worldwide, water shortages, food crises, debt-ridden economies, and the growing demand for commodities by China and India are only a few of the forces that will inevitably change everything about the way we do business.

Many deny the need for change and seek to shore up the precipice even as it erodes. One way they do this is by pouring billions of your and my tax dollars into supporting the status quo, climate-destroying technologies.

While it has never been easy to get an accurate count of how much is spent to make energy look cheaper than it really is, and to keep the incumbent industries happy, it is a big number. As described in chapter 3, for the United States estimates range from a high of $87 billion a year to the more recent calculation by the Environmental Law Institute at over $72 billion in the study period between 2002 and 2008.[26] The National Research Council estimated in 2009 that indirect subsidies for fossil fuel energy in the United States were $120 billion in 2005. Whatever the number, worldwide subsidies supporting fossil fuels dwarf those for renewables. Subsidies to solar, wind, biofuels, and the other young and developing renewables industries are roughly 1 percent of the subsidies given to the fossil fuel industries.[27] Further, in the United States, most of the largest subsidies to fossil fuels are written into the tax code as permanent provisions. By comparison, subsidies for renewables, by one estimate totaling $29 billion in the United States for the past several decades, are time-limited initiatives implemented through energy bills with expiration dates that limit their usefulness.[28] Bloomberg New Energy Finance reported that federal renewable subsidies are finally rising, reaching between $43 and $46 billion in 2009, but handouts to the existing fossil industries, which Bloomberg estimates at twelve times as much, dwarf any renewable support.[29]

Similarly, inefficient use of energy by governments helps perpetuate the status quo. The U.S. federal government spent more than $24.5 billion on electricity and fuel in 2008 and projects that if it achieved its commitment to reduce greenhouse gas emissions by 20 percent it would save between $8 and $11 billion in avoided energy costs by 2020.[30]

America is hardly the only culprit. In 2010 the International Energy Agency released a study of the global subsidies that prop up the climate-destroying forms of energy. The IEA concluded that in 2008, the last year for which numbers are available, the use of fossil energy worldwide was underwritten by well over $557 billion in government support in thirty-seven developing countries.[31] This does not count direct payments to fossil industries or subsidies for nuclear power or other polluting forms of energy. The IEA estimated that merely phasing out these perverse subsidies between 2011 and 2020 would alone cut primary global energy demand by 5.8 percent by 2020. That would be huge,

equivalent to the current energy consumption of Japan, Korea, Australia, and New Zealand combined. It would reduce global oil demand by 6.5 million barrels of oil a day (predominantly in the transport sector) in 2020, or around one third of current U.S. oil demand. Dr. Fatih Birol, chief economist of the IEA, observed that removing subsidies was a policy that could change the energy game "quickly and substantially." He's right. Retaining current subsidies, on the other hand, would be responsible for emissions of 2.4 gigatons of CO_2, equivalent to the current combined emissions of France, Germany, Italy, Spain, and the UK.[32]

The subsidies are unlikely to be eliminated anytime soon, however. The fossil industry spends a lot of its own money to convince the public that they are just fine. In 2010, The Global Climate Coalition, an oil industry association—its members include Amoco, the American Petroleum Institute, Chevron, Chrysler, Cyprus AMAX Minerals, Exxon, Ford, General Motors, Shell Oil, and Texaco—spent at least $63 million on publicity campaigns to make you believe that any reduction in the use of fossil fuel will cripple the economy and ruin business.[33]

The United States Chamber of Commerce, also a member, funded teams to visit every local Chamber of Commerce across the country to claim that the science of climate change isn't settled, that there is no proof of climate chaos, and that even if the climate is changing, the real issue is American jobs. They claim that any legislation that raises the cost or reduces the amount of energy that the United States uses will strangle our way of life and be ruinous to business.[34]

True conservatives, climate capitalists, and others committed to unleashing American ingenuity and ensuring prosperity know that change is necessary, but it will not come without a fight.[35]

We Need a Miracle

Sydney Harris once penned a cartoon in which two scientists are scribbling equations on a chalkboard. In the middle one of them writes, "Then a miracle occurs." The other scientist objects, saying, "I think you need to be a little more explicit here in step two."

Any sober look at the climate chaos now ravaging the globe and the efforts by the incumbent industries to remain dependent on the technologies of the last century makes it clear that we need a miracle.

Perhaps not surprising to a capitalist, our best hope for the source of that miracle is the business community. Already the smarter American companies are renouncing the worst excesses of the old way of doing business. In the autumn of 2009, PG&E, Nike, Apple, GE, and the utilities Pacific Gas and Electric, Public Service of New Mexico, and Exelon resigned from the U.S. Chamber of Commerce, announcing that business needs representation from an organization that appreciates the need and potential benefits to industry of being part of the climate solution.[36] Ford Motor Company, no longer a Global Climate Coalition member, won a 2009 EPA award for improving energy efficiency in the United States by 5 percent, saving itself approximately $16 million in the process.[37]

A 1995 survey by the consulting firm Arthur D. Little showed that just 4 percent of the 187 responding companies took environmental issues seriously in their business decisions. By 1998, that number had grown to 90 percent of 287 businesses polled by *Industry Week* magazine. More than 80 percent of Fortune 500 companies have created environmental charters and most multinational firms, responding to stakeholder pressures, have designed environmental strategies.[38] Additionally, corporate codes of conduct, such as the Ceres Principles, are increasingly common and improve industrial responsibility toward the environment.[39]

By 2010, a corporate commitment to sustainability was common. At that year's World Economic Forum at Davos, Switzerland, *Corporate Knights* magazine announced that more than 70 percent of the top global companies are on a sustainable path.[40] Companies are formalizing their sustainability communications by reporting to third parties like the Carbon Disclosure Project (from 235 reports filed in 2003 to 2,204 in 2008, a nine-fold increase) and the Global Reporting Initiative (from 175 reports to 1,226 in 2008, a seven-fold jump).[41] The *Financial Times* analyst Alan Smith found that "corporate social responsibility (CSR) has become such an important concept that in some situations it

is soon to be required by law that publicly listed companies disclose ethical, social and environmental risks in its [*sic*] annual report."[42]

When such magazines as *Time*, *Newsweek*, and *Bloomberg Businessweek* all feel compelled to provide annual lists of the hundred most sustainable companies, joining the ranks of the Dow Jones Sustainability Index and the Global 100, the trend is clear.

The explanation for this trend is not, as some snarky commentators have alleged, CEOs undertaking charity by playing at being green.[43] The reality is quite the contrary. Ernst & Young's recently released 2009 Business Risk Report concluded that "in order to maintain their corporate image and reduce environmental impact, companies must take proactive measures, including more complex decisions regarding capital spending, production procedures, and installed technologies" for climate protection. The report found that, despite uncertainties in the regulatory environment, companies must prepare for changes in regulation and carbon-trading schemes. But the report pointed to regulations as the second risk, specifically mentioning increased regulatory restrictions of energy-resources extraction. It listed the 2008 surge in oil prices and brand reputation as the primary reasons that companies must be prepared to manage the "risk of radical greening around them." It placed what it called "the need for social acceptance and corporate social responsibility" in the top ten risks facing business. "The risk will rise again in the future," the report concluded, stating that "successful companies will be those who put environmental policy at the top of their agenda and adapt their business to that goal. A consumer products commentator argued, 'As growth resumes and environmental degradation continues this will re-emerge as a very powerful force in shaping business.' "[44]

Even the *Harvard Business Review*, as described in chapter 1, has acknowledged what most everyone in the field recognizes: sustainability is now the key driver of innovation.[45] Michael Porter, a professor at Harvard Business School, asserts that "managers must start to recognize 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."[46]

Transforming the Economy

This tectonic shift in how global business views the issue of sustainability is a great start to crafting a new economy, but it remains insufficient. So long as Americans continue borrowing more than a billion dollars a day to buy fossil oil from distant and unstable parts of the globe, no durable recovery is possible.[47]

In 2009, Jonathan Porritt, an adviser to the Prince of Wales, warned, "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 wrote in support of the UK government's chief scientific adviser, Sir John Beddington, who predicted, "A 'perfect storm' of food shortages, scarce water and high-cost energy will hit the global economy before 2030." Porritt warned, "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." He believes that the storm will hit by 2020.[48]

A growing number of commentators recognize that the current economic crisis is different from prior market downturns. The *New York Times* columnist Thomas Friedman argues, "Let's today step out of the normal boundaries of analysis of our economic crisis and ask a radical question: What if the crisis of 2008 represents something much more fundamental than a deep recession? What if it's telling us that the whole growth model we created over the last 50 years is simply unsustainable economically and ecologically and that 2008 was when we hit the wall—when Mother Nature and the market both said: 'No more.' "[49]

Friedman's right. The economic system that has given so many of us such a high standard of living is based on Hayes's cheater economics. The future's prosperity will depend on our success in shifting to a whole new way of doing business: to Climate Capitalism. This is what the companies described in this book that are staying the course with energy efficiency, that are publishing sustainability codes of conduct, that

are pledging to cut their carbon emissions, are sensing. They recognize that they are the leaders of this new way of doing business. They know that their shareholders will be better for it, and they are committed to leaving a legacy that future generations will revere.

Many astute analysts describe the needed transformation. They call for communities to relocalize and reclaim control over where their energy comes from. They welcome decisions and policy changes that will give citizens a resilient future in the face of peak oil and the ravages of climate change.[50] Many books such as *Climate Code Red: The Case for Emergency Action*, by David Spratt and Philip Sutton, and *Straight Up*, by Dr. Joseph Romm, set forth brilliant policy prescriptions. Others—Bill McKibben's *Earth: Making a Life on a Tough New Planet*, James Gustave Speth's *The Bridge at the Edge of the World: Capitalism, the Environment, and Crossing from Crisis to Sustainability*, Dr. David Orr's *Down to the Wire: Confronting Climate Change*, and Tim Flannery's *Now or Never: Why We Must Act to End Climate Change*—acknowledge that the situation is dire and that much is already irrevocably lost.

This is no doubt true. The world has left matters until very late. However, much remains to save, and there is no more important work ahead of us. The single overriding point of *this* book is that doing that work also happens to be the best route to profitability and competitive advantage.

Business remains the most potent force for good on the planet, and in this new century business leaders such as Walmart's Rob Walton and General Electric's Jeffrey Immelt are proving the views of predecessors like Milton Friedman and Jack Welch wrong. They are showing that investing in climate protection is not only smart corporate risk reduction, but simply better business.

Principles of Climate Capitalism

The CEOs of the companies implementing greater sustainability in their business practices may not recognize it, but they are following the principles set forth a decade ago in this book's predecessor, *Natural Capitalism*. These principles have proved to be some of the best guides a

company can use as it embraces sustainability in its own operations. They also represent a roadmap to a sustainable economy.

The first principle, buying time by using all resources as efficiently as possible, is cost-effective today and is the best way to address many of the worst problems facing humankind while delivering premium returns on investments. There are many smart companies implementing this principle, from measuring and managing their carbon footprints with the Carbon Disclosure Project, to Mi Rancho Tortilla's saving $175,000 a year by implementing efficiency measures because it knows it has to do so to meet Walmart's Sustainability Scorecard. It and the other small businesses participating in Natural Capitalism Solutions' "Solutions at the Speed of Business" program are enjoying returns on investment ranging from 100 percent to more than 600 percent. Perhaps the best example of the success of efficiency is GE's use of the Ecomagination campaign to regain the company's status as an innovation leader.[51] This commitment, little more than greenwashing when CEO Jeffrey Immelt announced it (all that GE did was to rebrand as "green" some of the products it was already making), is now the engine driving the company's growth. Even in a down economy, Ecomagination revenues rose from $5 billion in 2005 to over $25 billion in 2010. It enabled GE to cut its emissions by 22 percent in 2009 compared to its initial goal of 1 percent in 2004. By 2015 GE reckons to cut the energy intensity of its operations by 50 percent.[52] In his annual letter to shareholders, Immelt confirmed that Climate Capitalism is good for the bottom line, reporting, "Ecomagination is one of our most successful cross-company business initiatives. If counted separately, 2009 Ecomagination revenues would equal that of a Fortune 130 company and Ecomagination revenue growth equals almost two times the company average."

Efficiency buys time, but unless that time is used to redesign how businesses are run and how products are made and delivered, no amount of efficiency will solve the climate crisis or enable us to create a truly sustainable economy.

Smart climate capitalists are also implementing the second principle of Natural Capitalism: redesign how we make and deliver all products and services using approaches such as cradle-to-cradle concepts, Bio-

mimicry, the circular economy, Design for the Environment, and others.[53] Nature makes a wide array of products and services that run on sunlight, producing neither waste nor toxics. The design of macroeconomic systems and microeconomic enterprises should mimic healthy, native ecosystems in diversity, adaptability, resilience, and local self-reliance. As Biomimicry's founder, Janine Benyus, says, "After 3.8 billion years of research and development, failures are fossils, and what surrounds us is the secret to survival. The more our world looks and functions like this natural world, the more likely we are to be accepted on this home that is ours, but not ours alone."[54]

The Calera company is using seawater and 92 percent of the carbon dioxide waste from the Moss Landing, California, power plant to create cement in the same way that sea creatures create their calcium silicate shells. Every ton of cement the process makes sequesters half a ton of CO_2, in just the way that coral reefs are formed. Investors include Vinod Khosla and Peabody Coal.[55]

Recognizing that green plants do not see CO_2 as the biggest poison of our time but rather use it to create starches and glucose, the building blocks of life, Dr. Geoff Coates at Cornell and other scientists are mimicking this process, using CO_2 and catalysts to make polycarbonates, a biodegradable plastic that is almost 50 percent CO_2 by weight. "It's highly abundant and really cheap," says Dr. Coates. He is using similar catalysts to create Styrofoam from orange peels.[56] Existing companies have huge opportunities to "intrepreneur" sustainable solutions, as well.[57] GE worked with Walmart to commercialize more cost-effective LED lightbulbs and other efficiency technologies. Because of such success, GE committed $10 billion more to Ecomagination research and development to grow its portfolio of environmentally sensitive products, services, and technologies. The fact that the Chinese 11th Party Congress passed the Circular Economy Initiative, now a guiding factor in China's massive investment in renewable energy and energy efficiency, should give all Western economies pause.[58]

Achieving a truly sustainable economy will also mean managing institutions so they are not just efficient and innovative, but also restorative of human and natural capital, the third principle of Natural Capitalism.

Business as usual has degraded intact ecosystems and human communities around the world. To reverse this we will need to change how we define success. Ecosystem services such as a healthy climate, soil fertility, and the restorative capacity of an intact biosphere are not presently on any company or country's balance sheet. Yet they underpin the capacity of the planet to sustain life and thus the economy. So long as our economic and accounting system treats them as having a value of zero, it will be impossible to implement any sort of capitalism that can deliver enduring wealth and well-being.

Honest Accounting

The profession of accounting arose when managers realized that if they did not have honest information about the financial status of their company they could not manage intelligently. Today, an equally momentous transition is needed in how businesses and governments keep accounts. Business practices that do not tell the ecological truth, that "externalize" environmental and social costs, and that drive companies and all of us to exceed the carrying capacity of the ecosystems to support life (and, lest the obvious be missed, all economic activity) need to be recognized as bad and unethical business.[59] The explicit warning in the UN's Third Global Biodiversity Outlook is that if ecosystems don't survive, neither will businesses. As Ray Anderson, the business leader who chaired the President's Council on Sustainable Development, bluntly asks: "What's the business case for ending life on earth?"[60]

Respectable economists are beginning to ask similar questions. Efforts such as Natural Capitalism Solutions' work to create a comprehensive Integrated Bottom Line analysis have attracted the interest of the Institute of Chartered Accountants of England and Wales.[61] Economists and others are also asking whether humans exist only to serve economic goals, as Madison Avenue has assumed, or whether the economy should be so designed that it serves humanity. It is not an easy issue to grapple with. The American economy is now 70 percent dependent on consumer spending, which is why, after the 9/11 attacks, President Bush implored