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Focus

It's Getting Easier Being Green

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Climate change is triggering a paradigm shift in the manner in which we protect our environmental resources, leading to changes in environmental policy, regulations and business and consumer decision-making that benefits society at large.

Can a one-degree increase in global surface temperature over the past 100 years change everything about how we steward our environment?

As the late Kyoto Prize-winning meteorologist Edward N. Lorenz theorized, very small changes in a system can have very large and unexpected consequences. His renowned "Chaos" theory coined the "butterfly effect" by which he explained how something as seemingly inconsequential as a butterfly flapping its wings in Brazil could trigger a tornado in Texas. Can this slight increase in surface temperature be that small change that causes a chain of events leading to a large-scale phenomenon? Climate change may be the tipping point that shifts the United States away from its traditional environmental regulatory paradigm, which subsidizes today's economic progress at the expense of tomorrow's sustainable environment.

One has only to read the daily headlines to see that if the scientific consensus on global warming is correct, climate change presents the greatest physical threat the business community has ever faced. According to a Washington Post poll, climate change looms larger than any other environmental problem in the minds of the public, with 85 percent of Americans believing that global warming is actually occurring. Spurred by

this increasingly environmentally savvy public, politicians and bureaucrats at both the state and federal levels have concluded that something must be done to regulate greenhouse gas emissions. Just "what" is the real question and the "how" presents the greatest uncertainty to business of any environmental regulatory program since the formal advent of such programs in the early 1970s.

Before climate change was on anyone's radar, the last major environmental paradigm shift took place in the 1970s and 1980s, largely in response to sensational stories of contamination. The resulting public outcry spurred lawmakers into action. The chemical leak in Bhopal, India in 1984 by Union Carbide that was responsible for 20,000 deaths, and the much-publicized Love Canal development in 1978, which was built on the site of a former toxic waste dump, caused the public to demand that polluters and governments work to clean up legacy contamination. The Love Canal catastrophe in particular led directly to the passage of the Comprehensive Environmental Response, Compensation and

Liability Act (commonly known as "Superfund") in 1980; Bhopal, to the Emergency Planning & Community Right-To-Know Act in 1986. Superfund and the emergency planning act, along with the Clean Air and Water Acts and comparable state laws provide the current standards for environmental law and regulation.

Today, however, as the public becomes duly alarmed over the projected disastrous worldwide impacts of unchecked global warming, regulatory programs must be designed to pay for and prevent future harm. Global warming is the first "global" environmental issue that affects everyone

equally around the world. One metric ton of greenhouse gas in the United States is just as threatening as one ton somewhere else on the planet. As a result, we are no longer dealing with issues of local concern — a contaminated piece of property or local air quality — but a global issue causing a major shift in perspective. Though initially slow and now chaotically uncertain, politicians know "where their bread is buttered" and our local, state and federal governments' response to the public's vociferous concerns is now accelerating. A true shift in the regulatory paradigm is occurring, a shift that is looking to prevent a future cataclysmic environmental event and move us toward a proactive precautionary approach to protecting our diminishing natural resources and preventing irreversible environmental harm.

The Greening of Management

Businesses have traditionally relegated environmental compliance issues to local facility managers or other lower-level employees whose primary role is to make sure the company does not get into trouble. Under this model, top executives and corporate boards were unlikely to pay attention to the day-to-day banality of environmental issues unless, of course, a problem arose that could affect profits, such as a major chemical spill or a toxic tort lawsuit that required cleaning up a past mistake. This practice has led to an "out of sight, out of mind" mentality when it comes to factoring environmental concerns into economic decision-making. However, a trend is emerging to elevate environmental matters to a management level *ab initio*, whereby businesses consider the environmental consequences of a decision before it is made, rather than dealing with the aftermath if something goes wrong. Many major companies, such as Owens-Corning, General Electric, Dow Chemical and DuPont, have recently employed environmental vice presidents or chief sustain-

Many major companies, such as Owens-Corning, General Electric, Dow Chemical and DuPont, have recently employed environmental vice presidents or chief sustainability officers.

ability officers. Indeed, the former head of the Sierra Club is now aligned with Wal-Mart, in order to “green” the company in a new direction. Seeking to accomplish much more than basic regulatory compliance, these new executives have the power to effect changes that allow companies to save money by increasing efficiency and profiting from green initiatives. In addition to profiting from “green consciousness” by customers, corporations may also profit smartly from their actions through a proposed cap-and-trade program. In the United States, cap-and-trade systems first gained prominence when amendments to the 1990 Clean Air Act established the first cap-and-trade system to reduce emissions of sulfur dioxide, the primary cause of acid rain. This system proved to be an environmental and economic success — reducing sulfur dioxide emissions at a fraction of the expected costs. A local example of this type of cap-and-trade program is the South Coast Air Quality Management District’s Regional Clean Air Incentives Market program. The South Coast district is the air-pollution control agency for all of Orange County and the urban portions of Los Angeles, Riverside and San Bernardino counties. This area of 10,743 square miles is home to over 16 million people — about half the population of the whole state of California and the second most populated urban area in the United States. Because this area’s smog problem is so severe, and is required to achieve stringent federal and, even more stringent, state clean air health standards in the coming years, the South Coast district found itself at the forefront of the nation’s emission-reduction efforts and created the clean air incentives program. It offers financial incentives to reduce emissions. Each of the approximately 400 companies participating in the program receives an allocation of its trading credits providing its annual emissions limit. Credits were initially assigned in the early years, circa 1994, based on past peak production and subject to the requirements of existing air-quality

rules and control measures. Thereafter, companies were allocated an ever-declining balance to force emission reductions over time. Credits assigned each year can be bought by companies that cannot, or choose not to, meet their limits and can be sold by companies that will exceed their required emissions cap. A similar cap-and-trade system for carbon dioxide emissions will create a financial incentive for emission reductions by assigning a cost to polluting. If a state, regional or nationwide cap-and-trade program comes into fruition, environmental decisions will have tangible economic consequences, with board meetings devoted to the business strategy and timing for making capital investments to curb emissions or to buy and sell emission credits.

Another new boardroom discussion will be addressing the impact of a new climate change regulatory requirements. Company executives and boards will be discussing what voluntary measures they will take to reduce emissions and react to those which will be governmentally enforced by future regulations. Additionally, under the Sarbanes-Oxley Act, corporate boards will increasingly be required to proactively review, assess and disclose the material environmental risk associated with climate change to their shareholders and public.

Promoting Energy Efficiency

Promoting efficiency in consumer products is another example of the paradigm shift. Energy Star is a joint program of the Environmental Protection Agency and the Department of Energy designed to protect the environment through energy-efficient products and practices. In 1992, the EPA introduced Energy Star as a voluntary labeling program designed to identify and promote energy-efficient products to reduce greenhouse gas emissions. On April 22, 2008, Earth Day, the EPA reinvigorated the Energy Star program and launched a new campaign in the fight against climate

change called “Change the World, Start with Energy Star.” The Energy Star label is now on major appliances, office equipment, lighting, home electronics and is now also extended to cover new homes and commercial and industrial buildings.

Although Energy Star products generally carry a higher price tag than the standard product, consumers are catching onto the idea that the long-term cost savings from an Energy Star product outweigh the higher up-front cost; Energy Star has successfully delivered energy and cost savings across the country, saving businesses, organizations and consumers about \$14 billion in 2006 alone. Over the past decade, Energy Star has been a driving force behind the more widespread use of such technological innovations as light-emitting diode traffic lights, efficient fluorescent lighting, power management systems for office equipment and low-standby energy use.

In addition, the mandatory phase-out of incandescent light bulbs as part of the 2007 energy bill signed by President Bush represents how consumer attitudes and public policy have meshed to accomplish an environmental objective.

Consumers have increasingly expressed a willingness to pay a premium for “going green,” if they believe it will actually save them money in the end. The elimination of incandescent bulbs is an example of politicians making policy based on this shift in consumer prerogatives, which recognize “lifecycle costs.” Analysts predict that because of the greater efficiency of fluorescent bulbs, replacing a cheaper incandescent bulb with a fluorescent one actually pays for itself in a few months. In the name of the public good, individual consumer choices have been constrained, but in a manner that the public appears, some, admittedly, begrudgingly, to accept.

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Catching the Green Wave

By **Randolph C. Visser, Olivier F. Theard**
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Like the “butterfly effect,” which posits that a butterfly flapping its wings in Brazil could trigger a tornado in Texas, climate change is the first global environmental issue in that the impacts of greenhouse gas emissions are not localized — a carbon dioxide release in California affects temperature in Bangladesh, for instance. Duly alarmed over the projected disastrous worldwide impacts of climate change, a true shift in the environmental regulatory paradigm is occurring, a shift that looks to prevent a future cataclysmic environmental event and move us toward a proactive precautionary approach toward protecting our diminishing natural resources and preventing irreversible environmental harm.

Climate change has: compelled states, the federal government and the international community to pass laws and attempt to reach, or strong-arm consensus on needed actions to curb global warming and shifted strategies in regards to land use and development with a focus on “smart growth” sustainability in order to reduce the urban sprawl that has led to an explosion in single-occupancy vehicle travel.

As evidence grows that the business community is responding to a “greener” public by shifting its manner of corporate environmental management, recent environmental laws and regulations passed or being considered by environmentally (or politically) motivated politicians will serve to accelerate this shift. California, long at the forefront of environmental regulation, passed landmark climate change legislation in 2006 that requires massive

cuts in GHGs, and the legislation will be the engine that will drive California’s response to climate change for years to come. California law, the Global Warming Solutions Act of 2006 (AB 32), requires that California reduce its greenhouse gas emissions to 1990 levels by the year 2020, an approximately 25 percent reduction, and requires emissions reductions from most major economic sectors. Accomplishing the emission-reduction goals of AB 32 requires looking to the past (1990 emissions) not to allocate responsibility for cleaning up past contamination, but rather as a reference point for future environmental management.

In an effort to set an example for the private sector, many local governments have turned to promoting environmental sustainability in the building and remodels of government facilities.

California is far from alone in developing new environmental regulatory programs that account for the future threat of climate change. Many states, including New Jersey, have passed similar aggressive legislation, and the international community appears to be working toward consensus on the need to curtail emissions to avoid prospective harm. The U.N. Framework Convention on Climate Change recently brought the major emitting countries together (including the United States) and, though there remains significant disagreement over major items such as numerical emissions limits, the convention did produce a roadmap for future discussions. All countries agreed “deep cuts in global emissions” would be required and that “delay in reducing emissions significantly constrains opportunities to achieve lower stabilization levels and increases the risk of more severe climate change impacts.”

California’s largest cities are also becoming green. On Earth Day, April 22, Mayor Antonio Villaraigosa promoted and the Los Angeles City Council adopted, a

plan to slash the city’s planet-warming greenhouse gases to 35 percent below the 1990 level by 2030, and make Los Angeles the “cleanest and greenest city in the country.” San Francisco Mayor Gavin Newsom has a blueprint to cut his city’s greenhouse gases to 20 percent below the 1990 level by 2012, creating “the greenest large city in the United States of America.”

Evidence of change is most pronounced in the area of land use and transportation policy, where a forward-looking paradigm will have the greatest effect on the reduction of greenhouse gases. Vehicle emissions alone account for 41 percent of California’s greenhouse gas emissions, and the number is likely consistently large in other states. For decades, local governments with virtually unfettered power have approved developments farther and farther away from jobs and urban centers, basing their decisions largely on the need to boost tax revenue in local communities. Such policies have caused Californians (and drivers in other states) to drive more and longer to meet everyday needs. If trends continue, the projected 59 percent increase in total miles driven by 2030 will overwhelm expected gains from vehicle efficiency and low-carbon fuels.

In an effort to set an example for the private sector, many local governments have turned to promoting environmental sustainability in the building and remodels of government facilities. In the United States, EPA statistics show that buildings account for 39 percent of total energy use, 12 percent of the total water consumption, 68 percent of total electricity consumption, 38 percent of the carbon dioxide emissions. In fact, many are adopting the United States Green Building Council Leadership in Energy and Environmental Design (LEED) rating system when designing these facilities. LEED is the nationally accepted benchmark for the design, construction and operation of high-

performance green buildings. According to the Green Building Council, various LEED initiatives including legislation, executive orders, resolutions, ordinances, policies and incentives are found in 72 cities, 22 counties, 16 towns, 27 states, 12 federal agencies, 10 public school jurisdictions and 35 institutions of higher education across the United States.

Climate change will also force local governments to change their ways when approving new private-sector projects. They may be forced by the federal and state governments to promote smart growth in land use decisions, seeking to reduce urban sprawl and to reduce consumption of energy for cooling, heating and power generation. As noted by the Pew Center on Global Climate Change, "the achievement of significant reductions will require a major change in the way U.S. urban systems have been evolving over the past half-century." In the past, local governments have acted without restraint and in the future will be required to make smart growth decisions, forcing localities to adopt growth management plans that comport with state greenhouse gas-reduction goals.

In California, Attorney General Jerry Brown used the state's groundbreaking AB 32 global warming mitigation legislation as precedent in a now-settled lawsuit against San Bernardino County. His office is compelling the county to inventory its total greenhouse gas emissions and

to come up with a reduction action plan tied to new development, through a long-existing regulation known as the California Environmental Quality Act.

With an eye on changing local government behavior, in 2008 the California Legislature is expected to consider a bill, AB 375, which would require local transportation planning agencies to implement greenhouse gas reduction targets that will be met through local land use decisions, including decisions on approving new development projects. Though the bill faces significant opposition, it is clear that, at the very least, California is engaged in the discussion of environmental sustainability, spurred by the future threat of climate change and its potential impact on California's natural resources.

Even without federal or state mandates, more and more local governments are "warming" to the concept of sustainability, not just as a way to protect against climate change, but also because it saves money by conserving resources. As part of Villaraigosa's plan to slash Los Angeles' emissions, he signed an ordinance developed in partnership with the City Council that requires all projects at or above 50,000 square feet or 50 units to comply with the general LEED certified standard. In exchange, the city will work with builders to speed up the approval process

and remove obstacles in the municipal code for element of sustainable building design such as green rooftops, cisterns and permeable pavement. Los Angeles is not alone. Other cities throughout the nation, such as Chicago, New York and Salt Lake City, have taken dramatic steps to reduce emissions, with local politicians realizing the value of going green. Increasingly, cities with green initiatives are featured in national publications and touted for their sustainability and conservation efforts. This no doubt leads to an increase in city-wide economic development.

If we have not tipped, we are certainly teetering on a paradigm shift in both the private and public sector.

Climate change has driven consumers, private industry, politicians and governments to more proactively manage our environmental resources, changing the way we all think and behave for the better of all mankind.

Given Kyoto Prize-winning meteorologist Edward N. Lorenz's very recent death, we are reminded that he perhaps got it right here as well — that a small one-degree change in temperature can, indeed, change everything, once and for all, for a more sustainable future.

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