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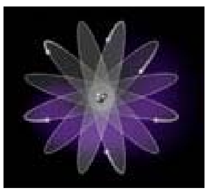
BATTLING CLIMATE CHANGE

The Race Against Climate Change

How top companies are reducing emissions of CO_2 and other greenhouse gases



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On Nov. 21 power company executives from all over the country gathered in the Pit, a spacious General Electric () auditorium in Crotonville, N.Y., to meet with GE CEO Jeffrey R. Immelt and his team. The day was overcast and cold, but the discussion was about the warming climate. At one point in the meeting, David J. Slump, GE Energy's chief marketing executive, asked for an informal vote. How many of the 30 or so utility and GE business executives thought that, once President George W. Bush was no longer in office, the U.S. would impose mandatory curbs on the emissions of carbon dioxide and other greenhouse gases linked to global warming? Four out of five of them agreed. "Forget the science debate," says Cinergy Corp. () CEO James E. Rogers, who was at the meeting. "The regulations will change someday. And if we're not ready, we're in trouble."

The world is changing faster than anyone expected. Not only is the earth warming, bringing more intense storms and causing Arctic ice to vanish, but the political and policy landscape is being transformed even more dramatically. Already, certain industries are facing mandatory limits on emissions of carbon dioxide and other greenhouse gases in some of the 129 countries that have signed the Kyoto Protocol. This month representatives of those nations are gathering in Montreal to develop post-Kyoto plans. Meanwhile, U.S. cities and states are rushing to impose their own regulations.

A surprising number of companies in old industries such as oil and materials as well as high tech are preparing for this profoundly altered world. They are moving swiftly to measure and slash their greenhouse gas emissions. And they are doing it despite the Bush Administration's opposition to mandatory curbs.

This change isn't being driven by any sudden boardroom conversion to environmentalism. It's all about hard-nosed business calculations. "If we stonewall this thing to five years out, all of a sudden the cost to us and ultimately to our consumers can be gigantic," warns Rogers, who will manage 20 coal-fired power plants if Cinergy's pending merger with Duke Energy is completed next year.

One new twist in the whole discussion of global warming is the arrival of a corps of sharp-penciled financiers. Bankers, insurers, and institutional investors have begun to tally the trillions of dollars in financial risks that climate change poses. They are now demanding that companies in which they hold stakes (or insure) add up risks related to climate change and alter their business plans accordingly. For utilities like Cinergy that could mean switching billions in planned investments from the usual coal-fired power plants to new, cleaner facilities.

The pressure is forcing more players to wrestle with environmental risks, even if the coming regulations aren't right around the corner. As the debate over climate change shifts from scientific data to business-speak such as "efficiency investment" and "material risk," CEOs are suddenly understanding why climate change is important. "It doesn't matter whether carbon emission reductions are mandated or not," explains David Struhs, vice-president of environmental affairs at International Paper Co. () "Everything we're doing makes sense to our shareholders and to our board, regardless of what direction the government takes." The nation's biggest paper company, with $25.5 billion in sales, IP has upped its use of wood waste to 20% of its fuel mix, from 13% in 2002. That's cut both net CO_2 output and energy costs.

REALITY DAWNS

Adding to the pressure on CEOs, the public has largely accepted global warming as reality. And as in the case of IP, the economic logic can be compelling. Far from breaking the bank, cutting energy use and greenhouse emissions can actually fatten the bottom line and create new business opportunities, while simultaneously greening up companies' reputations. One company that has hiked its visibility on this changed landscape is GE. It formed a new Ecomagination division last May to offer everything from more efficient locomotives to advanced, low-emitting coal power plants.

Scores of companies have already taken action to fight climate change. Who are the leaders? In this special report, *BusinessWeek* has teamed up with the **Climate Group**, a British organization that serves as a clearing house for information on carbon reduction, and Innovest Strategic Value

Advisors, a leading Wall Street green investment research firm. Together with a panel of expert judges drawn from academic institutions, we have identified and ranked the companies that have shown the greatest initiative in cutting their greenhouse gas emissions. We have also identified best practices, effective policies, and what kinds of results to expect.

Details about how the judges made their selections and a wealth of material on the companies and individuals in the rankings can be found at **businessweek.com/go/carbon**. The lists feature some gold-plated names: Citigroup () is working with Fannie Mae () to encourage sales of energy-efficient homes. IBM () saved hundreds of millions of dollars by cutting energy use, while Unilever managed to slash its greenhouse gas output by more than 10% in a single year.

Topping the company ranking is an experienced hand at making the most out of changing regulations, DuPont (). Back in the mid-1980s, DuPont created a profitable business selling substitutes for chlorofluorocarbon (CFC) refrigerants that were destroying the earth's protective ozone layer. Tackling climate change was a natural extension of that experience. After studying the data, "we came to the conclusion that the science was compelling and that action should be taken," says DuPont Chairman and CEO Charles O. "Chad" Holliday Jr.

BEATING GOALS

In 1994, DuPont committed to cutting its gas emissions by 40% by the year 2000 from its 1990 levels. By 2000 the company had met its original target and set an even more ambitious one -- a 65% reduction by 2010. But the gains have been so dramatic that DuPont has already hit that goal too. It also uses 7% less energy than it did in 1990, despite producing 30% more goods. That has saved $2 billion.

Saving money and reducing risks are both powerful incentives, and they help explain why investors and insurers are pressuring CEOs to tackle climate change.

Insurers in particular are staggered by their mounting bills for hurricanes, floods, fires, hailstorms, disease, heat waves, and crop loss. Many scientists agree that higher temperatures are causing more powerful storms and perhaps intensifying extreme weather events, ranging from drought and wild fires to ice storms.

Even tiny weather changes bring awesome costs. A slight uptick in intense storm activity could boost annual wind-related insured losses, to as much as $150 billion a year -- an increase equivalent to two or three Hurricane Andrews in an average season, according to a 2005 study by the Association of British Insurers. Indeed, insured losses from catastrophic weather events have already increased fifteenfold in the past 30 years. "Risk of climate change is real. It's here. It's affecting our business today," says John Coomber, CEO of insurer Swiss Re.

Rising temperatures aren't the only factor in the increasing toll from weather-related disasters, of course. Development along coastlines and other high-vulnerability areas is surging, concedes Evan Mills, an energy scientist at the U.S. Energy Dept.'s Lawrence Berkeley National Laboratory. But overall, "weather-related losses are becoming more erratic and growing much faster than such shifts can explain," he says.

The insurance exposure extends beyond weather events to management decisions. Corporate directors and officers are protected from personal liability for mismanagement by so-called D&O policies. If executives at companies that hold the policies don't take stock of their environmental risk exposure, they could be on the firing line for mismanagement -- with insurers picking up the tab. Says Chris Walker, managing director of Swiss Re's Greenhouse Gas Risk Solutions: "Property. Life. Health. Crops. D&O -- you name it. It's the perfect storm for insurers."

That's why climate change is causing insurance companies to ally with institutional investors, banks, and rating agencies. Together they are pushing companies to start thinking about greenhouse emissions as a material risk, just like other forms of financial risk that can impair future earnings. JPMorgan Chase & Co. (), for instance, is helping analysts and bankers model the impact of carbon on the banks' clients. "Global warming is on the radar screen of a lot of financial institutions," said Denise Furey, senior director of Fitch Ratings Ltd., at a recent climate conference.

The specter of new regulations on carbon emissions has already galvanized executives at Alcoa Inc. (), another company on the *BusinessWeek*/Climate Group list. To reduce its greenhouse emissions and save energy, too, Alcoa improved a key step in the aluminum production process, helping to cut total greenhouse gas output by 25%.

A handful of big coal burners have also leaped to the forefront. American Electric Power (), Cinergy, and TXU () all did detailed studies of the risks posed by climate change -- and by expected new rules. Their biggest challenge: planning new power plants for an uncertain future. At some point in the next 40 years -- the operating life of a plant -- the U.S. is certain to join in a round of international greenhouse discussions, says Michael G. Morris, CEO of AEP, the nation's biggest coal consumer: "That's clear in my mind, and in our board's mind." If the U.S. rules are similar to Europe's, where it already costs a company more than $20 to release a ton of CO_2, utilities and rate payers could face billions in expenses.

That would force utilities to invest more in lower-carbon alternatives such as wind power, "clean" coal, or natural gas, which emits one-third as much carbon per kilowatt as coal. But executives need to know soon what rules they will have to meet. That's why many are in favor of mandatory limits -- though they hesitate to say it publicly because of the opposition in Washington.

ISOLATED

The President remains opposed to any policy that would require carbon cutbacks. Instead, the White House asserts that climate change can be tackled with voluntary action and with major investments in alternatives to fossil fuels, such as hydrogen.

Yet the White House is growing increasingly isolated. U.S. public opinion is shifting. In October, a Fox News poll found that 77% of Americans believe global warming is happening, and of those, 76% say it's at least partly due to human activity. That's making greenhouse gas reductions trendy: The 2006 Super Bowl in Detroit, for one, aims to offset all of the new CO_2 the championship generates by planting thousands of trees in the hills and towns near Ford Field.

More substantively, states are stepping into the breach with their own regulations. Nine Northeastern and Mid-Atlantic states have formed the Regional Greenhouse Gas Initiative (RGGI). By 2009 the initiative aims to set up a "cap-and-trade program" covering carbon dioxide emissions by nearly 200 power plants operating in Connecticut, Delaware, Maine, Massachusetts, New Hampshire, New Jersey, New York, Rhode Island, and Vermont. Companies would be given an upper limit on greenhouse gases they may release. If they can cut their emissions below that level, they can sell the unused allowances to companies that are emitting above their cap level.

This initiative could bring a major change in the politics of global warming. First, state action will compel more companies to seek nationwide regulation from Congress, explains Eileen Claussen, president of the Pew Center on Global Climate Change. "Companies don't want to see a patchwork of state regulations. As more states get involved, it ups the ante."

Plus, two likely candidates for the 2008 Republican Presidential nomination are on board. New York Governor George E. Pataki launched the regional initiative in 2003, and Massachusetts Governor Mitt Romney backs it in principle.

Meanwhile in Washington, the Republican-led Congress is opposing the Administration's hard line. On June 22, over the objections of the White House, the Senate voted 54-43 for a resolution calling on Congress to "enact a comprehensive and effective national program of mandatory market-based limits and incentives on emissions of greenhouse gases."

Some evangelical Christian groups, traditional allies of the Bush White House, have joined the call for action. "This used to be seen as just the passion of a few environmentalists on the left," says Jim Jewell of the National Association of Evangelicals, which includes 52 denominations serving 30 million parishioners. "But support on the issue has broadened. God's call on his people is to care for his creation."

In the battle in the nation's capital, it will help that some people believe God is on the side of greenhouse gas reductions. For most business executives, though, the real driver is the bottom line. Often, the best way to slash emissions is simply to reduce energy consumption. Because carbon is basically a proxy for fossil energy, cutting carbon equals cutting costs, argues energy guru Amory B. Lovins, head of the Rocky Mountain Institute (RMI), a nonprofit energy and environment policy think tank: "Efficiency is cheaper than fuel."

That approach is what landed Geneva's STMicroelectronics, the world's No. 6 chipmaker, on the *BusinessWeek*/Climate Group ranking. Lovins and the RMI helped cut the company's energy use by 5% per year. Many changes were surprisingly low-tech, such as putting in larger air-conditioner ducts. That enabled air-circulating fans to do their job at half speed, using just a seventh of the energy. Last year, with $40 million in improvements, the company saved $173 million.

When mandatory regulations are issued they essentially put a price tag on carbon emissions. That obviously makes cleaner, more efficient projects more financially attractive, spurring new business opportunities. GE, for one, is seizing the moment with its new Ecomagination division. And scores of small companies are bringing new clean-technology innovations to market. Massachusetts Institute of Technology chemical engineer Isaac Berzin started GreenFuel Technologies Corp. to harness the power of algae to grab CO_2 from the exhaust of a gas-fired power plant. At a pilot site atop MIT's on-campus power station, the GreenFuel device cuts CO_2 by 82% on sunny days and by 50% on overcast days.

How far can this effort go? Some economists say cutting emissions and boosting efficiency will spur economic growth this century. The engineering challenges are immense and will require research and development investment in fields that have been relatively neglected until now: alternative energies, carbon sequestration, higher efficiency engineering, new lightweight materials for buildings and vehicles, and rebuilding old industrial and energy infrastructure with clean gear.

Yet despite the claims of the global-warming skeptics, the cost can be affordable. As the examples of companies in the *BusinessWeek*/Climate Group ranking show, there often is a boost to the bottom line. Far more substantial cuts are needed to make a real dent in the global-warming problem. And clearly, the developing nations need to be on board with cleaner technologies as well. But the news is that many companies are energetically tackling this growing environmental challenge.

By Adam Aston and Burt Helm, with Michael Arndt in Chicago, Amy Barrett in Philadelphia, and John Carey in Washington