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oping to become the “greenest technology company on the planet,” Dell announced recently at a conference in Houston that it was the first computer company to join an organization working to accelerate the global transition to a

low-carbon economy.

The move to join The Climate Group followed announcements last year that Dell had partnered with The Conservation Fund and Carbonfund.org to plant trees on behalf of customers to offset the carbon dioxide produced from the electricity needed to power their computers.

The “Plant a Tree for Me” program – using trees to absorb carbon dioxide from the atmosphere and convert it into oxygen – is part of a larger commitment by the Round Rock-based company to go “carbon neutral” through energy efficiencies, renewable power purchases, and carbon offsets.

“We offered that program because we believe customers want to do something for the environment that is easy to do, has an immediate impact, and that they could relate to,” Dell spokesman Bryant Hilton said. “So tree planting, for the average customer, just sort of makes sense. Really, our vision is we want to be the greenest technology company, and our ⇨

JUST A SHELL GAME?

By Troy Anderson

CARBON OFFSETS



This photo was taken at a Step It Up event. The people in the crowd spell out “80 percent by 2050” (80 percent reduction of GhG emissions by the year 2050). Lieberman-Warner, however, only gets us to about a 66 percent reduction in emissions, far less than what science demands. This is one of the critiques of the bill.

belief is we can have a much bigger impact if we partner with our customers and suppliers to meet that goal.”

As concerns about greenhouse gas emissions have become an issue du jour and taken a central role in the presidential race, a growing number of companies throughout the nation and world are beginning to take steps to reduce their emissions of carbon dioxide and other gases that scientists say are contributing to climate change.

Meanwhile, as celebrity endorsements by Brad Pitt, the Rolling Stones, and Coldplay have fueled the rapid rise of carbon offsets in the popular consciousness, many businesses are voluntarily purchasing carbon credits, improving their image in the public eye by taking actions viewed as good for the environment. The Academy Awards went carbon-neutral last year. And although news reports questioned how effective its actions were at reducing greenhouse gases, the U.S. House of Representatives even got into the act, spending \$89,000 to purchase carbon credits to offset the U.S. Capitol Building’s

coal-burning power plant.

“We are seeing large companies with national presence like Starbucks, Staples, Kinko’s, Proctor & Gamble and Pepsi that are trying to offset energy use through use of renewable energy credits,” says Richard Silkman, managing partner of the Portland, Maine-based CETX Energy Agency, an energy procurement and consulting firm whose Texas operations are headquartered in Houston.

“But I think all companies are beginning to worry more about this issue. They are trying to position themselves in the marketplace by starting to pay attention to what their competition is doing and what their customers want.”

The surging interest in carbon offsets comes more than a decade after the passage of the Kyoto Protocol, a 1997 treaty to reduce greenhouse gases. The protocol, ratified by 177 countries but not the United States, went into force in 2005. Under it, the European Community and 37 industrialized nations committed to reduce emissions by an average of five



percent against 1990 levels between now and 2012.

The treaty helped launch the global “cap-and-trade” carbon markets, providing businesses with profit incentives to offset their carbon dioxide emissions. Although projections vary, experts estimate that carbon offsets will be a global \$15-\$30 billion market by 2012. Under the way the protocol works, companies in developed countries emitting more carbon dioxide than is allowed under Kyoto limits buy credits in the carbon market to offset the pollution. Countries that reduce emissions below what is allowed, or that help businesses in developing nations to reduce their emissions, can sell the credits.

Although the United States currently has no similar requirements, a flurry of climate bills has been proposed in recent years, including one by U.S. Senators Joe Lieberman (I-Conn.) and John W. Warner (R-Va.), which includes a cap-and-trade system, setting a cap on the amount of emissions a company, industry, or nation can release, and establishing a trading system for offsetting those emissions.

Known as the the Climate Security Act, it would reduce total U.S. greenhouse gas emissions by as much as 19 percent below the 2005 level in 2020, and by as much as 63 percent in 2050. A similar emissions trading program worked well in reducing smog- and acid rain-forming emission from U.S. power plants in the past. That cap-and-trade program was established by the Clean Air Act of 1990.

“The Lieberman-Warner bill is the main bill being considered in the Senate at this time, and it may be the first law to establish a cap-and-trade system,” says James Pittman, an ecological economist and associate faculty member at Prescott College in Arizona. “A common notion in the industry is that, regardless of which party wins the election, we’ll see some legislation dealing with climate change in 2009, and it’s likely it will establish a carbon market.”

Presidential candidates U.S. Senators John McCain, Hillary Clinton, and Barack Obama have all proposed cap-and-trade schemes that would set limits on carbon emissions and allow companies to trade credits among themselves. McCain has

proposed to reduce greenhouse gas emissions by 60 percent from 1990 levels by 2050, while Clinton and Obama have called for emission reductions of 80 percent by that time.

Meanwhile, some state governments are already moving to set up regional carbon markets. California Governor Arnold Schwarzenegger has proposed a cap-and-trade program. In 2005, New York and six other north-eastern states agreed to cut power plant emissions with a cap-and-trade program beginning next year.

The proposals come as scientists

say climate change is occurring faster than many had expected. The U.N. Intergovernmental Panel on Climate Change – a worldwide consortium of scientists that shared the Nobel Peace Prize with former Vice President Al Gore – recently concluded that there is a greater than 90 percent chance that greenhouse gases released by gasoline-burning vehicles and coal power plants are warming the planet. The U.S. Fish and Wildlife Service warned recently that melting sea ice is threatening the survival of polar bears. This prompted President Bush,



long skeptical as to whether greenhouses were contributing to global warming, to consider the iconic northern bear as the first species to be listed as threatened with extinction because of melting polar ice.

Late last year, Bush signed the Energy Independence and Security Act of 2007 to improve vehicle fuel economy and reduce the nation's dependence on oil. The act requires fuel producers to use at least 36 billion gallons of biofuel by 2022, and sets a national fuel economy standard of 35 miles per gallon by 2020.

"Energy security and climate change are two of the greatest challenges of our time," Bush said at the time. "Our understanding of climate change has come a long way. A report issued earlier (in 2007) by the U.N. Intergovernmental Panel on Climate Change concluded both that global temperatures are rising and that this is caused largely by human activities. When we burn fossil fuels, we release greenhouse gases into the atmosphere, and the concentration of greenhouse gases has increased substantially."

While environmental groups applaud efforts by government and business to address climate change, some question the use of carbon offsets, a popular new commodity in the growing carbon trading industry that they say has dubious environmental benefits. Environmentalists are especially concerned about the Lieberman-Warner bill, which, if enacted, would create a system of permits in greenhouse gas emissions through 2036. Environmentalists say the permits may be bought and sold for enormous profits, and describe the bill as the "biggest corporate giveaway in American history," valued at trillions of dollars. Environmental

groups say the bill allows the largest greenhouse gas emitters to offset their emissions by financing carbon reduction projects mostly in other countries, stalling the use of technologies that will reduce greenhouse gases in the U.S. And environmentalists have criticized these projects for not always delivering the promised reductions, saying there are strong incentives for cheating and creating bogus credits that do not result in any real reduction in emissions.

"There are a lot of concerns with the Lieberman-Warner bill," says Daphne Wysham, a fellow at the Institute for Policy Studies in Washington, D.C. and director of the Sustainable Energy & Economy Network. "It's basically going to result in huge giveaways to the coal industry, the nuclear industry, and the very industries we need to leapfrog away from to get to an affordable, clean energy future. To a large degree it will allow the market to solve a problem the market has created, namely climate change, and a free market will tend to benefit those who can best manipulate the market. The larger the industry, the more they are able to pay for climate futures. There are even climate hedge funds now."

The oil, gas, geothermal, solar, and wind power industries are also concerned about the Lieberman-Warner bill, and won't be able to support it unless significant changes are made, says Russell Jones, a senior economic adviser for the 400-member American Petroleum Association. As proposed, Jones says the bill has a number of provisions that the Association views as unfair to the natural gas industry.

"Natural gas is a very low-carbon fossil fuel," Jones says. "There is a provision under the bill that provides incentives for companies to reduce

LAST YEAR, BUSH SIGNED THE ENERGY INDEPENDENCE AND SECURITY ACT OF 2007, REQUIRING FUEL PRODUCERS TO USE AT LEAST 36 BILLION GALLONS OF BIOFUEL BY 2022, AND SETS A NATIONAL FUEL ECONOMY STANDARD OF 35 MILES PER GALLON BY 2020.



A LOT OF PEOPLE ARE CONCERNED ABOUT GLOBAL WARMING, AND AS A RESULT THEY WANT TO TAKE ACTION . . .

emissions, more specifically for coal mines and landfills to reduce emissions. But if you are a natural gas provider, you have to pay a fee for any emissions you have, like for the well head. It seems to be pretty unequal treatment.”

Joseph Romm, a senior fellow at The Center for American Progress, a Washington D.C. think tank, says he’s not a “big fan of offsets” either. Romm says many celebrities and big companies have purchased offsets, generating publicity, but he’s skeptical of whether those actions are actually reducing pollution.

“A lot of people are concerned about global warming, and as a result they want to take action and, absent a mandatory market, they are taking voluntary action,” Romm says. “But I consider most offset projects to be relatively questionable. There are a lot of people who are earnestly selling offsets, but they are selling projects that many people don’t consider legitimate. They are not trying to be fraudulent. They are just doing something I consider to be dubious, if

not pointless.”

Pittman said he disagrees with those who say the proposed cap-and-trade system is just a shell game that corporations will use to avoid having to really reduce the amount of greenhouse gases they emit.

“That would be true if it was just an emissions-trading system, but with a cap-and-trade system the emissions cap will be reduced over time, either through federal legislation or international treaty,” Pittman says. “I do think there are flaws in terms of how rigorously the cap is being established. But the most important thing is, we are establishing a system to regulate it. And even if we need to adjust the caps later, it’s a tremendous asset to get that cap set. The jury is out, and I wouldn’t make a conclusion on how effective it will be until we see how effective those caps will be in the first year.”

Currently, there are several types of emission projects, allowing polluters to emit one ton of carbon dioxide offset by a reduction project. Among the most common are energy efficiency

ones in which companies document improved production processes that reduce emissions, generating a carbon credit that can be traded on carbon markets like the Chicago Climate Exchange. The Exchange, established in late 2003 in anticipation of mandatory carbon markets being created, is a cap-and-trade system whose members make a legally binding emission reduction commitment. Other such exchanges include the Montreal Climate Exchange and the European Climate Exchange.

Another popular project involves companies that purchase renewable energy credits generated by wind, solar, and geothermal power, allowing them to say they are “carbon neutral.”

Over the last two years, Texas has expanded its wind power capability, becoming the top U.S. wind producer, displacing 23 million tons of carbon dioxide each year.

Duke Energy, a Fortune 500 company headquartered in Charlotte, N.C., recently acquired Tierra Energy, a wind power development company in Austin. The purchase included more



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than 1,000 megawatts of wind assets under development in Ector, Winkler, and Howard counties in Texas and other locations in the western and southwestern U.S. This purchase was part of a commitment to expand the company's wind power portfolio to reduce carbon emissions throughout the U.S.

"We have entered into a stake in the wind power business, and hope to grow that business in areas where wind is a viable fuel," Duke spokesman Rick Rhodes says. "We are looking at different options throughout the country, including wind and other renewables. We are at a crossroads and are watching closely what happens as public policy develops. We agree it's very important we improve our technology for carbon capturing and find new ways to make electricity with fewer emissions. I think one thing we are interested in seeing is a policy that basically looks at all carbon users and is fair."

The emission reduction projects most commonly associated with carbon offsets involve tree planting and other sequestration projects, such as ranchers and farmers who practice no-till farming, trapping carbon dioxide in the soil. Another emerging technology involves oil and natural gas companies that pump carbon dioxide into underground cavities.

"That's a very promising technology," Jones says. "The oil and gas industry has been using that for three decades. The initial goal was to store carbon dioxide underground to boost domestic oil production. But as concerns with the climate have grown, our people are looking for ways to expand the use of this technology."

Pittman says he believes the most cost-effective projects are energy efficiency ones, helping companies to save money, and creating credits that can generate revenues.

"In this case, using things like solar and thermal technologies or improving building insulation – there is just no reason not to be doing it," Pittman says. "As far as renewables, the biggest limit is on cost-effectiveness. Wind power is as cost-effective as coal, but solar energy is not as cost-effective as other sources of energy."

Ken Caldeira, a climate scientist at the Carnegie Institution's Department of Global Ecology at Stanford University who shared the 2007 Nobel Peace Prize with Gore for work on climate change, has conducted research that found planting forests in northern latitudes could actually make the earth warmer because the trees absorb a lot of sunlight without losing much moisture. And while growing forests, especially in southern latitudes, may remove up to half of the carbon released into the atmosphere, these "carbon sinks" may be reaching their limits as the forests mature and climate conditions change. As forest fires and wildfires consume ever-greater amounts of acreage, especially in the western U.S., Caldeira says the amount of carbon re-released into the



Above: Ken Caldeira shared the 2007 Nobel Peace Prize with Al Gore for work on climate change.

atmosphere is increasing. Caldeira is also concerned about opportunities to “game the system.”

“A lot of offsets have this problem,” Caldeira says. “I think most of them store carbon, most are probably good for the environment; but a lot of them don’t do anything significant to prevent long-term climate change. For one thing, how do we have assurances that in 100 years these forests will still be there? What prevents someone from cutting them down in the future? Over a quarter of the carbon dioxide released today will still be in the atmosphere 1,000 years from now. Will somebody be there to make sure the forest is still there?”

Generally, planting trees is good for the environment, says Romm, but he notes it’s difficult to ensure that the trees are really being planted, or wouldn’t be planted anyway.

“The issue is whether you are permanently reducing greenhouse gas emissions and whether you can have any confidence about it,” Romm says. “If I pay you to plant 1,000 or 2,000 trees in California or Montana, how do I know you won’t cut down 2,000 trees somewhere else? There are lots of reasons people plant trees. The question is, if someone is going to plant trees, should I pay them extra money for something they were already going to do anyway? The hardest question in offsets is whether they would do it anyway.”

In Butte, Montana, Ted Dodge, executive director of the National Carbon Offset Coalition, an association that aggregates and trades carbon offset credits for forest and range programs, says he’s seen a large increase in the number of farmers, ranchers, and others participating in the new markets.

“We are betting and we believe, once there are federal emission reduction rules in place at the federal level, that we are going to see a large market in carbon offset trading,” Dodge says. “In the last year, we’ve seen the amount of range offsets grow to almost 500,000 acres. We have reforestation projects going, planting trees on land not previously forested or in areas where forests were degraded, maybe by a fire.”

On croplands, farmers are generating credits through no-till farming. Many ranchers who are running cattle now have seasonal and rotational

grazing plans that help grasslands to thrive. Dodge says these practices are promoting conservation and generating profits for those involved.

“These kinds of offsets we see as a bridge to new technologies,” says Dodge. “We don’t say these are the answer to climate change. We say this is one of the answers. Over time, we think we can offset a pretty substantial portion of the emissions, somewhere between five to 10 percent in the U.S., through soil carbon storage and forestry projects.”

In Texas, Silkman said his company has not seen as much interest in carbon offsets as in northeastern states.

“We are seeing more of a demand for greenhouse gas emissions offsets in the northeast than we are in Texas,” Silkman said. “But the customers we have dealt with in Texas are beginning to worry about this issue. We have procured for some customers renewable energy credits. Most are wind energy offsets. They are buying renewable energy credits from wind projects as an offset to their carbon footprints.” **N**

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OVER A QUARTER OF THE CARBON DIOXIDE RELEASED TODAY WILL STILL BE IN THE ATMOSPHERE 1,000 YEARS FROM NOW. WILL SOMEBODY BE THERE TO MAKE SURE THE FOREST IS STILL THERE?

