

Taking No Chances

Disaster-Conscious Firms Treat Global Warming as a Reality

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After two unusually warm winters melted profits at his natural gas distributing company in Dallas, Robert W. Best decided he needed protection. So he spent \$4.9 million on a new tool called weather insurance.

If global warming causes the customers of his Atmos Energy Co. to continue using less gas to heat their homes, the policy will pay out cash to offset the company's operating losses.

That's the kind of practical response beginning to take place throughout U.S. industry as business leaders face up to the prospect of climate change.

While the Bush administration debates other governments about whether man-made pollution causes global warming -- and, if so, who should take responsibility -- many industries are trying to cope with the realities of extreme weather.

Insurance companies have begun hiring meteorologists to reassess the risk of natural disasters. Farmers are planting different types of crops and looking for crisis-proof seeds. Great Lakes shipping companies are petitioning Congress for dredging to compensate for falling water levels. Colorado ski resorts are discounting tickets to bring people back to the slopes after two sweaty winters.

These changes are incremental, not massive shifts in operations. But over time, those incremental reactions could add up to a major adaptation to "climate change's pervasive and growing impacts over the next century," said Nick Sundt, a scientist with the U.S. Global Change Research Program in Washington.

"I don't know for sure about global warming, but I do know the past 15 or 20 years have been warmer than normal," said Best, the chairman, president and chief executive of Atmos. "Some people will claim it's the natural cycle, but for us it doesn't really matter. . . . We've got to do something to protect ourselves."

Atmos, which distributes natural gas in 11 states, including Virginia, began investing in weather insurance a year ago. The winter that began in November 1998 and the one that followed were both more than 15 percent warmer than usual across the company's entire market, Best said.

He read about weather insurance in a trade journal and bought it through energy broker Enron Corp. If temperatures had been warmer than average last winter by a certain amount, Atmos would have gotten money back. As it turned out, last winter was slightly cooler and the insurance didn't kick in. But Atmos, concerned about the broader warming trend, has signed up for two to three more years.

Enron began offering the insurance in about 1997, said Todd Kimberlain, chief meteorologist for Enron Weather Risk Management. El Niño -- a periodic flow of warm surface water in the Pacific that disrupts weather patterns worldwide -- had produced several extremely warm winters, and companies were looking for a way to make themselves less financially vulnerable, Kimberlain said.

Some scientists believe El Niño and other weather systems intensify when gases such as carbon dioxide are released into the atmosphere by the burning of fossil fuels. Such substances are called greenhouse gases because they tend to trap heat, warming up the earth's surface.

The extra heat could provide energy to drive El Niño, hurricanes and other weather events. Warmer air can hold more moisture, so when it does rain, there is more potential for flooding. The real danger of global warming,

some scientists say, is that it could produce greater extremes in the weather -- a possible explanation for such recent phenomena as unforeseen high storm waves in the North Atlantic and flooding in Europe.

An unusually fierce El Niño has been blamed for reducing water levels in the Great Lakes over the past three years. Pleasure boats float below dock level and cargo ships can't pull up to shore to unload -- all symptoms of a problem that caused shipping companies to lose thousands of tons of carrying capacity last year.

George J. Ryan, president of the Lake Carriers' Association of shipping companies, said he personally worries about the causes of the lower water levels, but professionally just has to focus on the solutions. "I have to say from an industrial standpoint, I just have to consider what it will take for us to remain competitive," he said.

While Great Lakes water levels have gone through low cycles in the past, Ryan said, none of them came on as quickly as the most recent cycle. The recent warm winters prevented the lakes from freezing, causing them to continue evaporating year-round.

For now, boating interests are asking Congress to spend about \$2 million to deepen a pair of Great Lakes channels. But both industry and scientists fear global warming could cause long-term water loss -- predicted to be as much as four feet by the end of the century -- that would require far more expensive dredging and could even threaten the U.S. steel industry with crippling transportation costs.

The same uncertainty has affected the recreational skiing industry. Beginning in 1998, U.S. ski resorts suffered two straight winters of unusual warmth and low snowfall. While this year brought better conditions for the Northeast, several resorts in Colorado had to extensively discount tickets to boost their business. That led to sharp drops in profits.

On the other hand, business is fine for Areco Snow Systems North America, the Vermont-based distributor of Swedish snow-making equipment. Artificial snow has become the only way ski resorts can guard against increasingly erratic winters, said the company's president, Peter Geise. "There's definitely a warming trend," he said.

For some industries, the biggest worry is that the weather is becoming more unpredictable and extreme.

"What's of increasing concern to those in agriculture is that it seems like we have greater variation in the weather," said Richard Stuckey, past executive vice president of the Iowa-based Council for Agricultural Science and Technology.

What farmers really need, he said, are seeds that can withstand both drought and floods. In western Iowa, for instance, a recent period of unusual dryness led farmers to switch from corn to the more drought-resistant sorghum. But now they are struggling with unseasonably cool, wet weather.

Wanda Sorrells hears similar complaints from gardeners all over the country who call her for advice at the Park Seed Co. in Greenwood, S.C. As a senior staff horticulturist, Sorrells said she has become increasingly perplexed by the weather extremes she hears about from customers.

"There just seem to be unusual occurrences and these fluctuations where it will be unusually warm for a few weeks and then unusually cold, and that can be hard on certain plants," Sorrells said.

The biotechnology giant Monsanto Co. has an extensive search program for plant genes that are resistant to drought and other stresses in hopes of engineering hardier crops. While a company spokesman said those efforts are not aimed specifically at global warming, they are in response to an increasing demand from farmers for more resilient plants.

Agricultural scientists agree there are higher levels of carbon dioxide in the atmosphere. But they disagree on

whether the increase is caused by human activity and whether it leads to global warming. Higher carbon dioxide is not necessarily bad for agriculture; it's what plants breathe, after all.

Even climatic warming could have short-term benefits.

"The temperature change in itself might lengthen the growing season and it might enable people farther north to grow crops that are now" not feasible, said Paul Waggoner, a scientist at the Connecticut Agricultural Experiment Station in New Haven. "Maybe the Dakotas would become like Kansas. You'd go from spring wheat to winter wheat. That sort of thing."

While farmers have years to adapt to such potential changes, the uncertainty alarms another industry: insurance, which needs to understand long-term risk to set rates and stay financially viable. "They don't want to get caught behind the eight ball and have the risks change without them knowing about it in advance," said John M. Wallace, a professor of atmospheric sciences at the University of Washington who has taken part in national climate studies.

Many of his colleagues, Wallace said, have held conferences to explain climate change to the insurance industry, "and they're starting to hire some of our graduates, as well."

One of those graduates is Lixin Xeng, who advises insurance companies as a vice president for risk analysis and technology services at Benfield Blanch Co., a global risk management and distribution firm.

"This year is warmer than 50 years ago on average, no argument," Xeng said. "And what we're interested in is

Those disasters can range from the unexpected ferocity of a Hurricane Andrew, which devastated southern Florida in 1992, to the spread of a tropical disease such as the West Nile virus in a temperate place such as New York.

Meanwhile, British Petroleum PLC not only accepts that rising levels of carbon dioxide are causing the earth's average temperature to rise, it hopes to make a profit on it. The company is looking for profitable ways to reduce emissions and hopes to become the world's largest manufacturer of solar energy equipment.

"Now people are starting to look at this as a business opportunity," said Jeff Morgheim, who occupies a new position at BP: climate change manager. Companies, he said, are starting "to look at this in a whole new way."

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