Other Correspondence Received in Response to the May 7, 2007 Federal Register Notice on the Draft National Interest Electric Transmission Corridor Designations

Other Correspondence: Batch 5

May 15, 2007

We are all here today because of a fear of terrorism. I'd like to tell you about a historic building, Chapman/Beverley Mill on the Prince William/Fauquier County boundary off of I66 in Northern Virginia. It has many lessons to teach us that relate to our current situation regarding National Interest Electric Transmission Corridor designations.

(The mill is the tallest stone building in the U.S. and the site of the Civil War battle that determined the outcome of the 2nd battle of Manassas and thus was responsible for the war continuing for another two plus years.)

Built in 1742 the mill changed the development of the Shenandoah Valley from slave driven plantations to small family farms. It milled cornmeal and flour for eight American wars. It was the largest industry in Northern Virginia and sent product up and down the eastern seaboard. During WWII the mill ran 24 hours a day. In 1951 it was closed by the Virginia Health Dept. because of a new invention that was closing mills all over the country—a light that when shone on flour would show mouse urine!

Coincidently the growth of large Mid Western corporations manufacturing flour was making small community mills obsolete throughout the country.

Now how does Chapman's/Beverley Mill relate to today's reason for this meeting? The mill was once pivotal and important just as the U.S. is today. However, the mill couldn't keep up with the growth of technology and alternative business practices. It was forced to close. A technical giant fell from grace. In 1998 arsonists' set it on fire. It is a type of terrorism.

Although it doesn't know it, the U.S. is in a similar situation; the DOE wants to crisscross the countryside with transmission lines destroying beautiful countryside and historic sites that offer America a chance to appreciate their nation's history and to discern lessons that will shed light on today's problems. If this happens the terrorists will have won.

The terrorists really don't have to bother coming to this country to harm us. We are doing that to ourselves. Morally and environmentally we continue to sabotage our future and the future of many innocent people around the world. No one except a few disenfranchised citizens is pointing out that energy alternatives, similar to ones already routinely used in other states and Europe, and energy conservation can meet our energy demands. To continue to insist on the erection of more 500kv lines and 165 foot towers every tenth of a mile, is tantamount to continuing the Iraqi War because *someone* feels it can be won.

Let's pretend that Dominion Power has the purist of motives about erecting transmission wires throughout Virginia; that it will not make a dollar above the construction costs because this is a National Security issue. Would it still want to utilize this early 1900's energy approach if it is offered more money to install windmills?

How is continuing to pollute our already polluted air with more emissions from the dirty, outdated but grand fathered in coal-fired power plants in Ohio any different than continuing to sell fish tainted by toxic food because it is cheaper or "in the box" of conventional, comfortable, corporate thinking? Would that practice continue because of a National Security concern?

The DOE is supposed to take care of American citizens. The Dominion Power transmission lines and towers will be shedding shadows on historic Chapman's/Beverley Mill. Tourists who will be climbing around the site will be breathing in foul air

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Thoroughfare Gap History

Thoroughfare Gap is a narrow gap between Bull Run and Pond Mountains, through which Broad Run flows as it descends 87 feet. The Gap was used by migrating buffalo and traveling Indians long before it became a transportation corridor for grain and goods between the Valley and the Atlantic. Mention of the Gap was first recorded in 1697, by a group of Marylanders passing through in search of a band of Piscataway Indians. Later Tidewater planters used the Gap as a route to the rich Shenandoah Valley.

During wartime its use became even more strategic: it was an escape route during the French and Indian War, during the Revolutionary War it was the route east to join the army, and during the Civil War, it was a strategic passageway for both armies. At the time of the Spanish-American War in 1898, 10,000 American troops were stationed at the Gap to avoid a typhoid epidemic in Alexandria.

For many years, the Gap has been a major east-west thoroughfare. Today, Interstate 66 takes thousands of people east and west in their travels, many commuting to the Washington, DC area to work. These travelers are able to see the charred walls of the mill. Hopefully, in the future they will be able to stop, safely explore the stabilized ruins and learn more about the mill and the surrounding area.

Beverley Mill

Repository of the history of national events and national trends.

Virginia Landmarks Register designation.

National Register of Historic Places designation.

Virginia Civil War Trails site

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Preserve Beverley Mill

and

Its Place in American

History

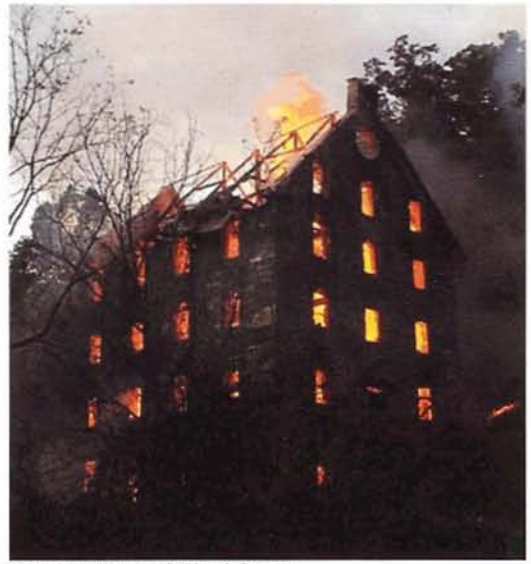


Photo Credit: PWC Fire & Rescue

History of Beverley Mill

Beverley Mill was built in 1742 by Jonathan and Nathaniel Chapman, brothers from an enterprising, well-connected colonial family. Enlarged in 1758, the mill became a prosperous gristmill that fostered the development of the Shenandoah Valley as a wheat and corn producing region for the next one hundred years. Due to the mill's location between the Valley and the city of Alexandria, corn and wheat could be transported efficiently by wagon to the mill, ground into cornmeal and wheat, and then shipped from Alexandria to ever-expanding markets in Europe and South America.

In 1759 Fauquier County was created from old Prince William County, and the related documents noted that the boundary between the two counties passed through the mill, as it does today.

The prosperity of the mill was enhanced when, in 1852, the Manassas Gap Railroad was completed, passing beside the mill and reducing the travel time to Alexandria. In 1858 the Chapmans enlarged the mill, raising it to a total of seven stories and making it a model of agricultural technology.

Beverley Mill has ground cornmeal and flour for American troops during seven wars: The French and Indian, the Revolutionary, the War of 1812, the Civil War, the Spanish-American War, and World War I and World War II.

The Civil War

By July of 1861 the Confederates had turned Beverley Mill into a meat curing warehouse and distribution center. Herds of cattle and pigs were enclosed in large pens, and more than two million pounds of Confederate meat were stored on the site. Confederates, leaving after the First Battle of Manassas, burned the meat and the mill to keep them from the advancing troops.

On August 28, 1862 Union General Ricketts was ordered to occupy Thoroughfare Gap to prevent Generals Lee and Longstreet from marching through the Gap and joining Confederate troops gathering for the Second Battle of Manassas. Historians say that if Ricketts had prevailed at the Battle of Thoroughfare Gap, which took place in and around the mill, the Second Battle of Manassas would never have taken place.

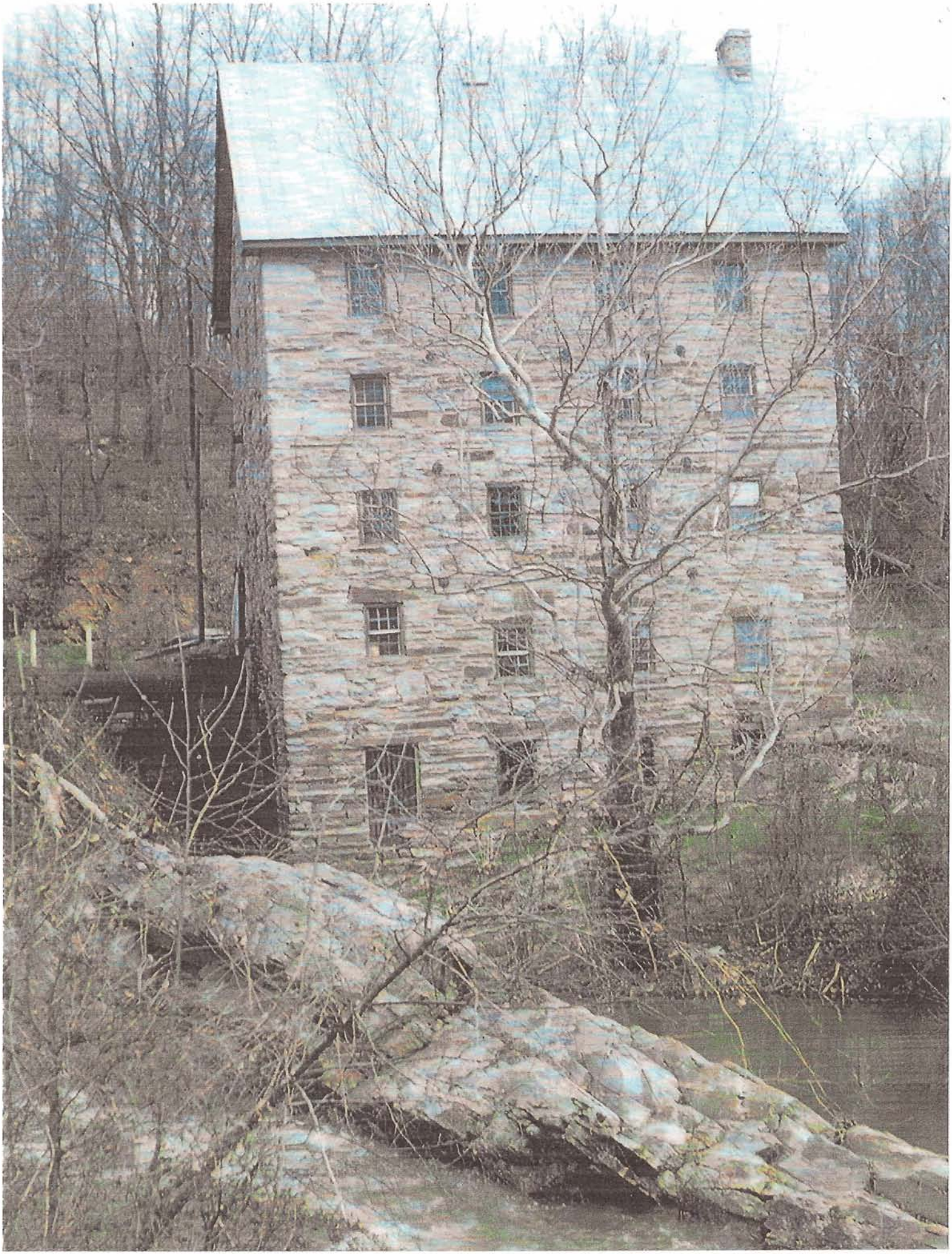
During much of the Civil War, Col. John S. Mosby and his Raiders traversed Thoroughfare Gap as they sought to disrupt the movement of Union provisions to their armies in the South.

By 1876 the Beverley family had restored the ruins to a very successful milling operation and the mill took on their name.

The Future of Beverley Mill

On October 22, l998, Beverley Mill was tragically vandalized and gutted by fire. Soon afterwards, Turn The Mill Around Campaign, a 501(c)(3) tax exempt operating foundation, obtained ownership of the property and has begun the steps necessary to stabilize the walls of the mill. The goals of this non-profit organization are to preserve the structure of the mill, to provide public access, to develop an interpretive program of the history and significance of the mill and Thoroughfare Gap, and to raise the funds needed to carry out these goals.

Plans call for pedestrian pathways around the mill and along the head race providing views of the millpond, flume, sluice gate, forebay, 29 foot wheel and tail race. In addition, visitors will be able to enter the mill to gain a greater appreciation of the enormity of the mill and the beauty of the stone work. Interpretive signs will explain the milling process and the impact of the industrial site on the evolving economy of the area. The old stone mill store will be restored and used as a kiosk interpreting the history of Thoroughfare Gap.



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…nto other parts of the chain — and they are clearly
big drivers of evolution.

— David Brown

Summer Predicted to Get Hotter

Summertime temperatures will be significantly hotter in the eastern United States toward the end of the century if current increases in greenhouse gas emissions are not checked, a NASA study concludes.

Average summertime temperatures in cities such as Washington, Atlanta and Chicago will most likely jump from the low to mid-80s to the low to mid-90s, the scientists said. In July and August — when rainfall is low — daily high temperatures in those cities could average between 100 and 110 degrees.

Scientists at NASA's Goddard Institute for Space Studies and the Woods Hole Oceanographic Institution refined predictions made by the Intergovernmental Panel on Climate Change. The researchers used some of the same modeling techniques to predict the build-up of heat-trapping gases and fed them into a widely used regional weather prediction model to come up with more specific forecasts.

The more extreme temperature predictions are a function, in part, of analysis of rainfall patterns. The team found that the global models did not take into account more local weather dynamics and so missed the potentially steeper increases. The new analysis, completed too recently to be included in the international report issued in February, predicts those higher temperatures by the 2080s if the world continues its "business as usual" increases in carbon dioxide emissions of 2 percent a year.

— Marc Kaufman

5/14/04 Wash. Post P. A6

5-5-2007 Wash. Post P. 2

Panel Calculates Cost of Global Warming Fix

Nations Could Afford Solutions, Scientists Say

By Marc Kaufman
Washington Post Staff Writer

An international scientific panel for the first time yesterday put a price tag on what it would take to avoid the worst effects of global warming, concluding that the effort would be affordable and would be partially offset by economic and other benefits.

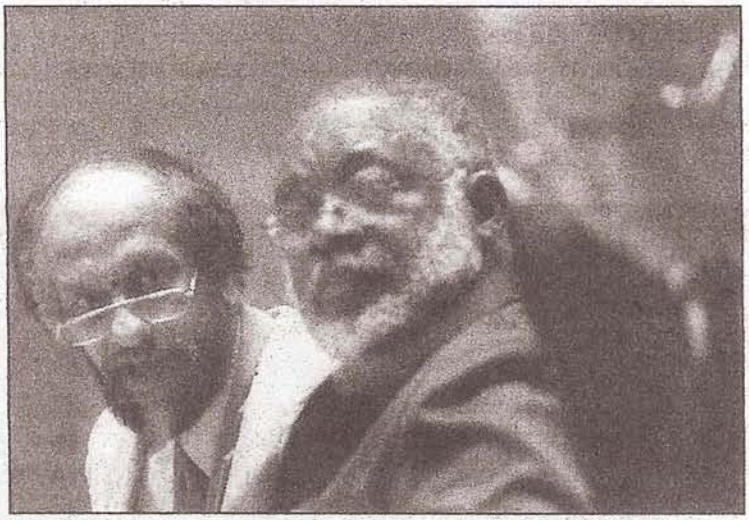
The most ambitious option, aimed at stabilizing the level of greenhouse gases from fossil fuels by 2030, would require measures that would add $100 to the costs associated with each ton of carbon dioxide pumped into the atmosphere, said the report by the Intergovernmental Panel on Climate Change (IPCC).

In a telephone news conference, several participants estimated that choosing that option could result in raising the cost of gasoline by up to one dollar a gallon over the next several decades.

Despite the likely costs, the consensus report of most of the world's governments said nations had no choice but to act. "If we continue doing what we are doing now, we are in deep trouble," said Ogunlade Davidson, co-chair of the working group responsible for the report on mitigating the effects of warming.

The White House quickly issued a statement rejecting the more aggressive options outlined by the report. Referring to the highest-cost scenario, James L. Connaughton, chairman of the White House Council on Environmental Quality, said it "would of course cause global recession, so that is something that we probably want to avoid."

Overall, the report said, blunting the consequences of global warming will require different lifestyles, higher prices for basics including gasoline and electricity, and a much greater investment in research and development efforts. The impact of those costs, however, would be significantly offset by the benefits of a less carbon-dependent economy, including a cleaner environment, more secure sources of energy and in some cases reduced costs for



BY CHAIWAT SUBPRASOM — REUTERS

Rajendra Pachauri, left, chairman of the climate change conference in Bangkok, speaks to participants Ogunlade Davidson, center, and Bert Metz.

recommendations on how best to address the threat from global warming. Instead, it offered projections of how much carbon dioxide would have to be eliminated to meet various goals for limiting greenhouse gases, along with assessments of hundreds of approaches.

The U.S. delegation embraced parts of the report, especially those highlighting possible new clean-energy technologies. But in his opening statement to a news conference yesterday, conference chairman Rajendra K. Pachauri said that "it is probably naive to believe that merely developing technologies in labs and workshops is the answer."

Pachauri said it will be necessary to put a price on carbon emissions, either through taxes or "cap and trade" systems, in which polluters buy and sell rights to put given amounts of greenhouse gases into the atmosphere. Unless governments take action and "market forces [are] present to attach a price to carbon, we're not likely to get a major dissemination of technologies, no matter how meritorious they may be," he added.

While the report did not specify what that price should be, it outlined how much benefit would come at various cost levels — $20, $50 or $100 per ton of emitted carbon. The world could meet the goal of stabilizing the level of greenhouse gases by 2030, the report said, at a sacrifice of less than 3 percent of the projected growth in the world's total economic output, or 0.12 percent annually. In other words, the world economy could still grow robustly, but at a slightly slower rate, while nations take steps to avoid severe climate change.

Under the 1997 Kyoto Protocol, the European Union has created an exchange in which the current market price for a ton of emissions is about $25. That price rises and falls with market forces and may change as the E.U. commitments under the protocol toughen in 2008.

Jonathan Pershing, one of the lead authors of the report and a program director of the World Resources Institute, said estimates of potential price increases for gas and other energy sources were not included in the report because they were based on assumptions that have not been well studied. He said the calculation of a $1-per-gallon gas price increase under the most aggressive carbon-reduction plan is based on the amount of carbon dioxide released when burning a gallon of gas.

Levels of greenhouse gases in the atmosphere — produced by power plants, industry, automobiles, trucks, airplanes, burning forests, some agricultural activity and methane from decomposing waste — have risen by 70 percent since 1970, the climate panel reported in February.

If nations do not begin to control emissions better, that level of heat-trapping gases is projected to increase by an additional 25 to 90 percent by 2030, with potentially calamitous results, especially in poorer nations. The effects would include a surge in ocean levels, the disappearance of a large number of species, abrupt climate changes in tropical zones and possibly large migrations of displaced people.

The panel's reports are based on research by a broad range of scientists, and the resulting policy assessments were negotiated by government representatives until they reached a consensus. Some climate experts said that process led to conservative documents that do not take into account the most recent discoveries — such as findings that the Arctic ice cap appears to be melting at a much faster rate than described in the February IPCC report.

The two biggest producers of greenhouse gases are the United States and China, and both objected to many conclusions of the draft report sent months ago to the 120 participating nations.

Connaughton's concerns yesterday about the economic effects of an aggressive campaign to reduce greenhouse gases reflected one aspect of the Bush administration policy on climate change. Another was highlighted by Harlan L. Watson, head of the U.S. delegation in Bangkok, who said the report affirms "the importance of a portfolio of clean energy technologies consistent with our approach."

Other participants, including Stavros Dimas, E.U. environment commissioner, emphasized the report's conclusion that even dramatic steps would be technically and economically feasible.

"There is no excuse for waiting," he said. "It is now time for the rest of the international community to follow our lead and commit to ambitious reduction targets."

The panel's report said that energy efficiencies and many new low-carbon technologies are within reach but that governments are not spending enough on research.

"Government funding in real absolute terms for most energy research programs has been flat or declining for nearly two decades, and is now about half of the 1980 level," the report said. Officials said that since the United States first called in 1990 for voluntary rather than mandatory efforts to reduce greenhouse gases, U.S. emissions have increased by 28 percent while federal funding for climate change research has declined significantly.

Local Warming

A carbon dioxide wake-up call for the Washington region

JUST HOW MUCH does the Washington region contribute to America's greenhouse gas problem? A recent Post investigation indicates that it's hard to tell — authoritative numbers on the area's net carbon emissions don't exist yet. But the Post analysis also indicates that emissions from two major sources of greenhouse gases have increased at an alarming rate in the Washington area — and can be expected to continue doing so unless local authorities find ways to cut back.

The Post's David A. Fahrenthold used public records to calculate the increase in carbon dioxide output attributable to motor vehicle pollution and energy consumption in the Washington region between 2001 and 2005. These emissions shot up 13.4 percent, more than twice the national average. The biggest increase was in the Virginia suburbs, where emissions swelled 18.8 percent. Indicators are particularly bad for fast-growing and pedestrian-unfriendly jurisdictions, from which commuters often drive long distances to other areas and where new homes eat up electricity. Tailpipe emissions from Loudoun County, for example, increased by about 43 percent. The increase is greater than you'd expect simply from the region's rapid growth, and it reinforces the fact that such growth has costs for which the price of new homes does not fully account. Policymakers fret most over the cost of roads, schools and parks that new residents require as vacant land is subdivided into single-family homes. But higher emissions, both of the pollutants that produce low-hanging smog and of those that cause the greenhouse effect higher in the atmosphere, also are a cost.

The most rational way to account for such costs would be a comprehensive federal response, such as a carbon tax, a cap-and-trade program or some combination of the two. But local governments, too, can help cut greenhouse emissions. The District and others, for example, now demand that large new buildings meet "green" energy efficiency standards. Fairfax County's "cool counties" initiative includes wide-scale efficiency improvements. New York Mayor Michael R. Bloomberg has embarked on an aggressive, long-term campaign to drastically reduce his city's carbon "footprint," using everything from public transportation to better building codes to congestion pricing for drivers. The Washington region's Council of Governments is just beginning to look closely at the issue, but we hope for a similarly ambitious plan for the national capital region.

Wedn., May 2, 2007 Wash. Post

Delaware Energy Debate Could Turn on the Wind

Offshore Turbines Among 3 Proposals

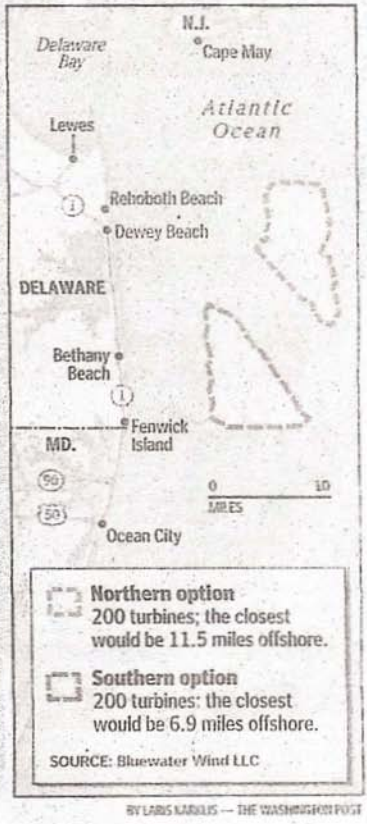
By David A. Fahrenthold
Washington Post Staff Writer

REHOBOTH BEACH, Del. — Two hundred towering windmills, each so tall that its blades would loom over the U.S. Capitol Dome, could be built in the Atlantic Ocean near one of Washingtonians' favorite beach retreats, under a plan being considered in Delaware.

The plan, which could create the first wind "farm" in waters along the East Coast, envisions a thicket of turbines offshore of either Rehoboth Beach or Bethany Beach, Del. As the blades are spun by ocean winds, designers say, the wind farm could provide enough power every year for 130,000 homes.

The wind farm is one competitor in an unusual kind of power-plant bake-off: Delaware officials are also considering plants that would burn coal or natural gas as they seek ways to generate more electricity. A preliminary decision could be made tomorrow.

So far, the debate over the windmills has turned on global questions about climate change and very local concerns about the impact on the ocean view. But from the beach, the wind farm's backers say, the giant turbines would look smaller than a boardwalk french fry.



BY LARRY KARGUS — THE WASHINGTON POST

See ENERGY, *A12, Col. 1*

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5-7-07 Wash. Post. P. 1

Del. Energy Debate Has Officials Seeking Least of Three Evils

ENERGY, *From A1*

"Toothpicks, with maybe little pinwheels on the top," said Jim Lanard, a spokesman for the company proposing the windmills, describing how they would look on the horizon more than six miles offshore. "You probably wouldn't be able to tell what they are."

Wind farms have sprouted all over the United States in the past decade. There are about 150, from California to the West Virginia highlands. But, so far, they have sprouted only on land.

Proposals to put turbines in the water have come less far — hung up, in some cases, by concerns that they will harm birds, disrupt shipping or become a blight on ocean vistas. One company that had planned wind farms off the Maryland and Virginia coasts, New York-based Winergy Power, says it has put those projects on hold while the federal government works on rules for issuing permits.

In Delaware, though, industry analysts say the debate has been different. Instead of wind-farm-vs.-no-wind-farm, here the debate has been windmills, which would not produce the kinds of greenhouse gases blamed for climate change, versus fossil-fuel plants, which would.

"When you say, 'Would you rather have a wind farm or would you rather have a coal plant?,' I think having the choice makes people say, 'Gee, the wind farm really is the lesser of the evils,' " said Walt Musial, a wind-energy specialist at the U.S. government's National Renewable Energy Laboratory in Golden, Colo.

The debate over power here began last year, after electricity prices spiked. Delaware legislators decided the answer was to produce more power, and they asked for proposals to build a new plant.

One of the plans they received was for a natural-gas plant. Another proposed to burn coal using a method that removes some of the greenhouse gases and other air pollutants.

And then there is the wind farm, which backers say could be completed by 2012. It is proposed by a New Jersey company called Bluewater Wind, which has one land-based wind farm in Montana but has not built an offshore farm anywhere moving air, said Peter Mandelstam, Bluewater Wind's president, making his case Wednesday during a chamber of commerce breakfast in Lewes, Del.

Mandelstam also stressed that the wind farm would not contribute to climate change, which is blamed for rising sea levels in Delaware and elsewhere. At times, the appeal was less than subtle.

"A third of Delaware will be underwater by 2100," Mandelstam said, citing University of Delaware research. "And we take that very seriously."

Representatives from the coal and gas bids responded that the wind farm would prove an unreliable source of energy, potentially forcing the state to buy power from elsewhere.

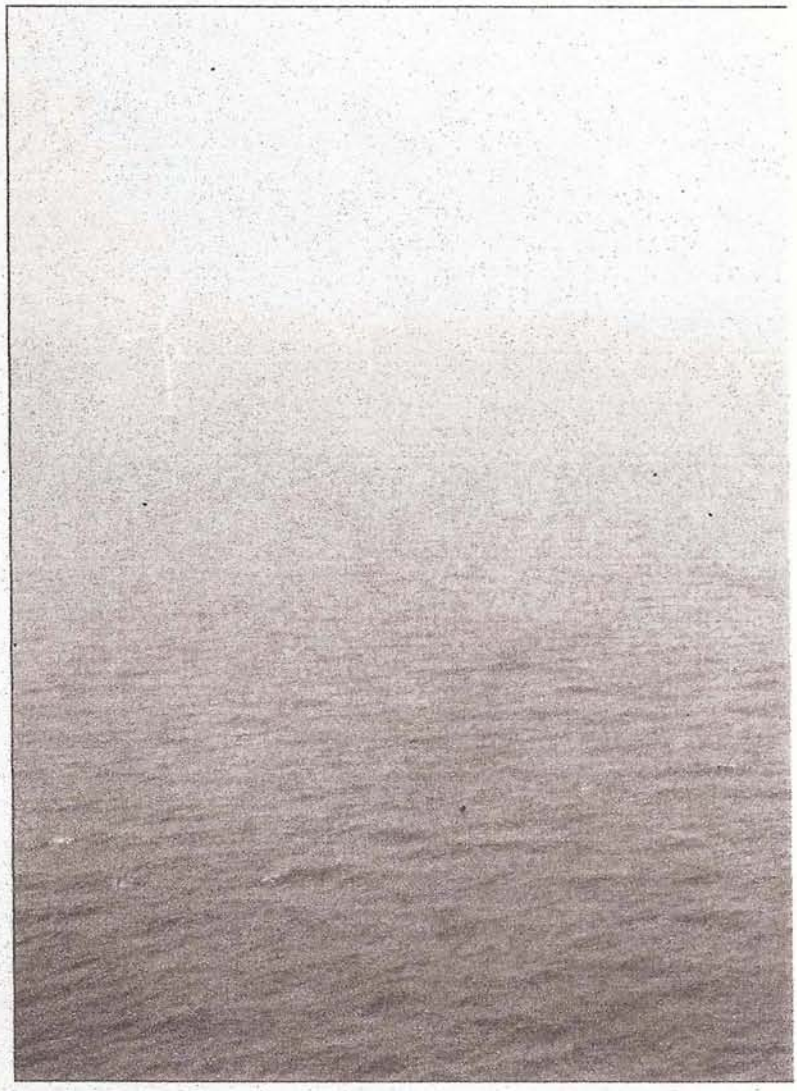
"Wind is intermittent. It doesn't blow all the time," said Raymond Long of NRG Energy, which proposed the coal plant. He told the crowd there would be no such problems with coal, because the United States has an abundant supply: "We're essentially the Saudi Arabia of coal."

At a meeting tomorrow in Dover, Delaware officials are expected to give preliminary approval to one of the proposals. They could also choose none of them or a combination. State staff members have recommended a combination of a smaller wind farm and a gas plant that would kick in when the wind doesn't blow.

And even if wind wins tomorrow, serious obstacles will remain. The biggest one might be Delmarva Power, the utility here, which would need to agree to buy electricity from the wind farm. It has come out publicly against all three proposals, saying none of them is cost-effective.

For now, though, the wind farm seems to have generated considerable public support here — in many cases, because of climate-change concerns. The Delaware Audubon Society has said it believes the windmills can be built in a way that will not pose a serious danger to birds.

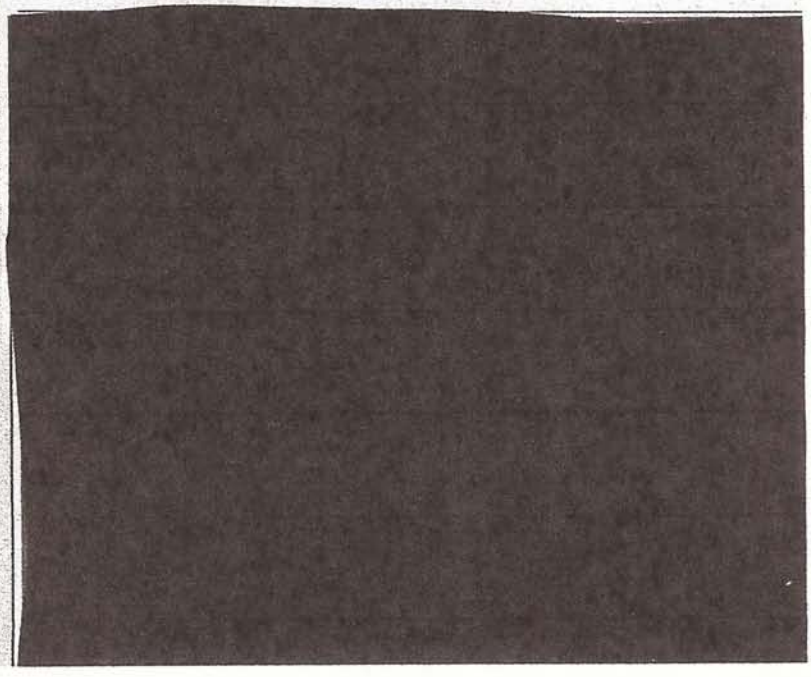
"This is an opportunity for our motto to be used," said Ronald Schaeffer, who consults with homeowners and businesses interested in putting up solar panels. He was at the Lewes breakfast. "We are 'The First State,' and we ought to be the first to use renewable energy on a



Denmark's Horns Rev Offshore Wind Farm is one of the world's largest such energy

But others said they could see a brighter side: What if the windmills actually brought more tourists, curious to look at the turbines or to steer a sailboat among them?

And anyway, T-shirt shop worker Barbara Boyer said, it's not like Rehoboth in the summertime is a



3-5-07 Wash. Post P.1

Cloudy Germany a Powerhouse in Solar Energy

By Craig Whitlock
Washington Post Foreign Service

ESPENHAIN, Germany — When it opened here in 2004 on a reclaimed mining dump, the Geosol solar plant was the biggest of its kind in the world. It is so clean and green that it produces zero emissions and so easy to operate that it has only three regular workers: plant manager Hans-Joerg Koch and his two security guards, sheepdogs Pushkin and Adi.

The plant is part of a building boom that has made gloomy-skied Germany the unlikely global leader in solar-generated electricity. Last year, about half of the world's solar electricity was produced in the country. Of the 20 biggest photovoltaic plants, 15 are in Germany, even though it has only half as many sunny days as countries such as Portugal.

The reason is not a breakthrough in the economics or technology of solar power but a law adopted in 2000. It requires the country's huge old-line utility companies to subsidize the solar upstarts by buying their electricity at marked-up rates that make it easy for the newcomers to turn a profit. Their cleanly created power enters the utilities' grids for sale to consumers.

The law was part of a broader measure adopted by the German government to boost production of renewable energy sources, including wind power and biofuels. As the world's sixth-biggest producer of carbon-dioxide emissions, Germany is trying to slash its output of greenhouse gases and wants renewable sources to supply a quarter of its energy needs by 2020.

Since the Geosol plant was built, it has been eclipsed in size by six other German solar plants, including the new world's-largest, the Solarpark Gut Erlasee in Ba-

See GERMANY, *A14, Col. 1*

Germany an Unlikely Force in Solar Energy

GERMANY, *From A1*

varia, which has more than double the capacity. Last month, construction began on yet another monster solar plant on an old military base in Brandis, about 12 miles north of Espenhain. Once completed, it will generate 40 megawatts, or enough to power about 10,000 homes.

German officials readily acknowledged that they are embracing solar technology not just for its environmental benefits. German firms that manufacture photovoltaic panels and other components have prospered under the new energy act and now employ 40,000 people. An additional 15,000 people work for companies in the solar-thermal business, which make heating systems for homes and businesses.

Matthias Machnik, an undersecretary for the German ministry of the environment, said the country can't hope to compete in the long term with perpetually sunny ones in generating solar power. But it hopes to expand its exports of solar technology and become the leader in that field as well.

"Unless climate change accelerates, we only have a certain amount of available hours of sunshine," Machnik said in an interview. "For us, of course we will use solar power, but it is more important to secure the know-how for research and development."

Last year, German exports accounted for 15 percent of worldwide sales of solar panels and other photovoltaic equipment, according to industry officials. German companies hope to double their share of the global market, which amounted to $9.5 billion last year and is growing by about 20 percent annually, said Carsten Koernig, managing director of the German Solar Industry Association, a trade and lobbying group.

BY CRAIG WHITLOCK — THE WASHINGTON POST

Hans-Joerg Koch manages the Espenhain plant and its 33,500 solar panels.

"It's been very important to create the necessary market in Germany," Koernig said. "We not only want to master the German market, but to conquer the world market as well."

For now, the technology remains expensive and barely registers as a fraction of total energy production — less than 0.5 percent. The government hopes to increase that figure to 3 percent by 2020.

Industry supporters, however, say there are other factors that favor solar production in the long term.

One is that other forms of non-fossil fuel energy are falling out of favor. The government has decided to phase out all nuclear power plants by 2020. And while Germany is also the world leader in wind power, a popular backlash is building against the towering wind turbines that have proliferated in farmers' fields across the country and are criticized as eyesores.

In Espenhain, local officials have warm words for their solar plant, owned by the Berlin-based company Geosol. The facility was constructed on land that had served as a dumping ground for millions of tons of coal dust produced by nearby mines since the 1930s. The property had been rendered unusable for agriculture or other purposes.

Two decades ago, the region was part of communist East Germany and known for that coal industry, which employed 8,000 people. After the reunification of Germany in 1990, most of those jobs quickly disappeared, but this part of the state of Saxony continued to suffer from air and water pollution from the mines.

"This region was known as the dirtiest in all of Europe," said Juergen Frisch, mayor of Espenhain. "The solar plant came at a very good time for Espenhain. It's helped to change our image."

Unlike the coal mines, the solar plant makes almost no noise, save for the low thrum of a few outdoor air-conditioning units that cool the electrical transformers. The plant, with 33,500 solar panels, sits on a 37-acre site in a field off a rural road and requires scarcely any maintenance.

On a tour of the property, Koch, the manager, acknowledged that eastern Germany is not the ideal site for collecting the sun's rays.

Contrary to popular expectations, however, the solar panels work fine on drizzly days, he said, although they are able to generate only a quarter to half the usual output of electricity. "We are still producing at the moment, even when we have overcast or rainy conditions," he said cheerfully.

Special correspondent Shannon Smiley in Berlin contributed to this report.

Power From the Sun

Germany leads the world in solar energy production and is adding more capacity.

Cumulative grid-connected photovoltaic capacity, as of end 2005

Germany	1,429 megawatts
Japan	1,422
U.S.	479
Australia	61
Spain	57
Netherlands	51

Total installed photovoltaic capacity, per person in 2005

Germany	17.32 watts
Japan	11.13
Switzerland	3.66
Netherlands	3.12
Australia	2.97
Austria	2.93

SOURCE: International Energy Agency

THE WASHINGTON POST

).C. Area ees Spike n Rate of Emissions

arbon Dioxide ncreases 13.4% n 4-Year Period

r DAVID A. FAHRENTHOLD
ashington Post Staff Writer

The Washington area is in the iddle of a carbon dioxide binge, ith emissions of this greenhouse as from vehicles and electricity ers having increased at more an twice the national rate be- reen 2001 and 2005, according a Washington Post estimate.

That estimate, which appears be the first to track the region's nissions from those two key urces, found a 13.4 percent in- ease. Nationally, those emis- ons grew by 5.6 percent in the me period.

The Post used traffic statistics id utility records to track the vo major components of green- ouse gases; other sources, such s farms and airplanes, were not sily quantified.

Environmentalists say that ese numbers illustrate an un- anted legacy of Washington's re- nt economic boom: Population rew, but emissions grew faster. s exurbs have crept out to farms id forests, the region has re- uired more energy for home air onditioners and long-distance ommutes.

The estimate also gives a sense f the task facing local govern- ents, which are taking their first teps toward measuring and re- ucing greenhouse gases. But ith emissions increasing so uickly, their goals appear to be

ee EMISSIONS, A16, Col. 1

Area Coughs Up Carbon Dioxide

EMISSIONS, From A1

receding even as they are set.

"The first stage is understanding the problem and committing to trying — and I don't think we've gotten there yet," said Paul Ferguson (D), chairman of the Arlington County Board. In January, Arlington began a program to conserve energy and tap renewable resources such as wind. "We're nowhere close," he said.

Emissions jumped the most in suburban Virginia, where the estimate shows an increase of more than 18 percent. Emissions from the Maryland suburbs grew less, about 11 percent, but that rate still outpaced the country's.

The brightest news came from the District, where emissions grew 6.7 percent. D.C. officials said they think the relatively low increase is partly a sign of changing behavior: Residents were leaving their cars at home and walking, biking or taking public transit.

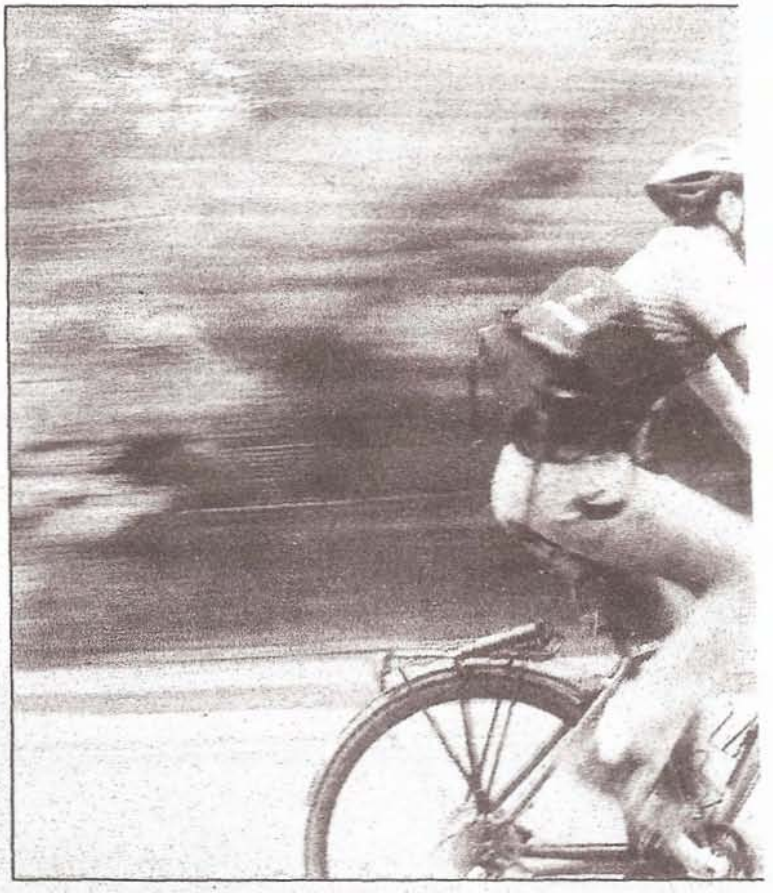
Carbon dioxide, which is produced when fossil fuels such as oil, gas and coal are burned, is one of several gases that accumulate in the Earth's atmosphere, trapping heat from the sun. Scientists blame such emissions for a gradual warming trend over the past few decades. They worry that more emissions, and more warming, could trigger widespread changes in nature.

In the United States, national statistics show that carbon dioxide makes up about 84 percent of all greenhouse gas emissions. The data also indicate that about 58 percent of U.S. carbon dioxide comes from two sources: power plants and the tailpipes of cars and trucks.

But much less information is kept at the local level. When the Metropolitan Washington Council of Governments voted this month to establish a committee on climate change, its first request was that the committee measure emissions. That task is expected to take months.

The Post estimate began with data on miles traveled by cars and trucks in local jurisdictions and the amount of kilowatt hours used by utility customers.

Then, using methods from the U.S. Energy Information Administration, those figures were used to calculate the total amount of car-



Ed Fendley bikes to his job at the State Department from his home in Ballston. I bike lanes and a rack at work. Despite foul weather and bad drivers, he says, "I

[See the chart for details.]

The figures from those calculations leave out greenhouse gases from other sources, such as agriculture, planes, boats and oil furnaces. Those missing figures could account for half of all emissions.

Still, the figures provide a glimpse of the Washington area's contributions to a global problem. They show that, even as climate change was becoming an urgent issue, residents were producing steadily more of the pollutants that cause it.

Jonathan Cogan, a spokesman for the Energy Information Administration, reviewed The Post's calculations and said the agency's formulas appeared to have been used correctly. "This doesn't represent everything, but it does represent two major sources of emissions," he said.

Carbon dioxide pollution is different from smog, which is composed of gases that cause prob-

Washington area does not meet the Environmental Protection Agency's smog standards; the EPA does not have regulations on carbon dioxide.

Across the area, carbon dioxide emissions increased faster than the population, which grew about 5.5 percent from 2001 to 2005. Environmental groups said that this is an indication that the problem is not only growth but the way in which the region has grown.

"People have moved farther and farther out and drive more and more miles," said Frank O'Donnell, president of the District-based Clean Air Watch. "What it's telling you is, sprawl is causing a big increase in greenhouse gases."

In the past few months, several jurisdictions have pledged improvements.

Maryland has joined the Regional Greenhouse Gas Initiative, a pact among Eastern states to reduce emissions from power

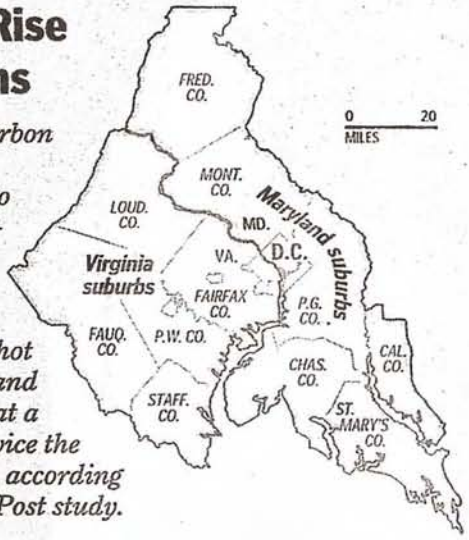
at More Than Double U.S. Rate

BY NIKKI KAHN — THE WASHINGTON POST

zero-emissions trip is facilitated by till beats sitting in traffic."

The Rapid Rise of Emissions

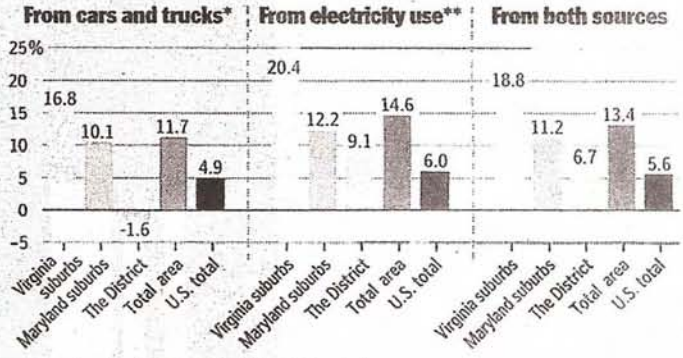
The amount of carbon dioxide — a key pollutant linked to climate change — produced by Washington area cars and electricity users shot up between 2001 and 2005, increasing at a rate more than twice the national average, according to a Washington Post study.



An Increase in the D.C. Area

The rate of increase was calculated by The Washington Post using data from governments, environmental groups and electric utilities.

Percentage change in carbon dioxide emissions from 2001 to 2005:



* Arlington County not included in Virginia suburbs.

** Frederick County not included in Maryland suburbs. Only partial data available for Stafford, Fauquier, Calvert, Montgomery and Prince George's counties.

SOURCE: Staff reporting

THE WASHINGTON POST

dards on autos.

Last year, Washington became the first major city in the country to mandate that some large new developments have "green" buildings designed to conserve energy. Montgomery County has a similar rule.

And in Virginia this year, Arlington and Fairfax counties have announced plans to reduce emissions. Fairfax's program, called a "cool counties" initiative, includes a proposal to buy 10 percent of the electricity for county government from wind farms, which produce no greenhouse gases.

Some residents are taking advantage of green-friendly policies. State Department employee Ed Fendley, for instance, commutes from his home near Ballston by bicycle. His zero-emissions trip is made possible by Arlington's bicycle lanes and the showers and bike rack provided by his employer — and his willingness to endure rain, snow and bad drivers.

"It still beats sitting in traffic,"

Board.

But much bigger changes will probably be necessary over the next few decades for the D.C. area to reduce emissions. Development will have to be clustered around mass transit, experts say. In far-flung suburbs, residents might one day rely on plug-in hybrid cars, which can run for long distances without burning gasoline.

And utilities will have to build plants that capture carbon dioxide or use non-fossil fuels.

That day seems far off. In Virginia, the Dominion power company has proposed a new plant to Wise County in the southwestern part of the state, would have pollution-reducing features.

But it would still burn mainly coal.

"Until a fuel comes along that can produce the same amount of megawatts with the same cost," coal won't be supplanted, Dominion spokesman Dan Genest said.

Still, many people concerned about pollution said last week that they are hopeful— encouraged by the attention being paid to climate change.

"We are starting," said Matthias Ruth, director of an environmental research institute at the

Humans Faulted For Global Warming

International Panel Of Climate Scientists Sounds Dire Alarm

By JULIET EILPERIN
Washington Post Staff Writer

An international panel of climate scientists said yesterday that there is an overwhelming probability that human activities are warming the planet at a dangerous rate, with consequences that could soon take decades or centuries to reverse.

The Intergovernmental Panel on Climate Change, made up of hundreds of scientists from 113 countries, said that based on new research over the last six years, it is 90 percent certain that human-generated greenhouse gases account for most of the global rise in temperatures over the past half-century.

Declaring that "warming of the climate system is unequivocal," the authors said in their "Summary for Policymakers" that even in the best-case scenario, temperatures are on track to cross a threshold to an unsustainable level. A rise of more than 3.6 degrees Fahrenheit above pre-industrial levels would cause global effects — such as massive species extinctions and melting of ice sheets — that could be irreversible within a human lifetime. Under the most conservative IPCC scenario, the increase will be 4.5 degrees by 2100.

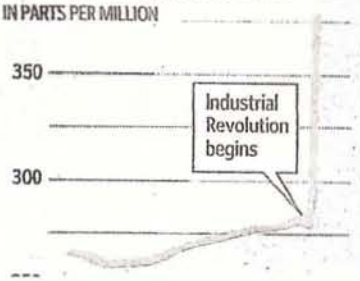
Richard Somerville, a distinguished professor at the Scripps Institution of Oceanography and one of the lead authors, said the world

See WARMING, A8, Col. 1

Scientific Consensus

An international team of scientists says that greenhouse gases from human activity . . .

Atmospheric carbon dioxide
IN PARTS PER MILLION



Drastic Steps Urged to

WARMING, From A1

would have to undertake "a really massive reduction in emissions," on the scale of 70 to 80 percent, to avert severe global warming.

The scientists wrote that it is "very likely" that hot days, heat waves and heavy precipitation will become more frequent in the years to come, and "likely" that future tropical hurricanes and typhoons will become more intense. Arctic sea ice will disappear "almost entirely" by the end of the century, they said, and snow cover will contract worldwide.

While the summary did not produce any groundbreaking observations — it reflects a massive distillation of the peer-reviewed literature through the middle of 2006 — it represents the definitive international scientific and political consensus on climate science. It provides much more definitive conclusions than the panel's previous report in 2001, which said only that it was "likely" — meaning between 66 and 90 percent probability on a scale the panel adopted — that human activity accounted for the warming recorded over the past 50 years.

Some of the report's most compelling sections focused on future climate changes, because the buildup of carbon dioxide in the atmosphere would exert an effect even if industrialized countries stopped emitting greenhouse gases tomorrow. Gerald Meehl, a senior scientist at the National Center for Atmospheric Research in Boulder, Colo., who helped oversee the chapter on climate projections, said that in the next two decades alone, global temperatures will rise by 0.7 degrees Fahrenheit.

"We're committed to a certain amount of warming," said Meehl, who worked with 16 computer-modeling teams from 11 countries. "A lot of these changes continue through the 21st century and become more severe as time goes on."

Meehl added, however, that a sharp cut in greenhouse gas emissions could still keep catastrophic consequences from occurring: "The message is, it does make a difference what we do."

For the first time, IPCC scientists also looked at regional climate shifts in detail, concluding that precipitation in the American Southwest will decline as summer temperatures rise, just as precipitation in the Northeast will increase. Linda Mearns — another NCAR senior scientist who was also one of the lead authors — said these changes could cause water shortages and affect recreational activities in the Southwest. Developing countries in Africa and elsewhere could also experience severe droughts.

Governments and scientific organizations across the globe nominate scientists to produce and review the IPCC assessment without pay under the auspices of the United Nations. A group of key authors and government officials met in Paris this week to finalize the document, which reflects three years of work.

"Every government in the world signed off on this document, including the U.S.," said World Bank chief scientist Robert T. Watson, who chaired the last round of deliberations. Watson added that compared with the 2001 report, "the difference is now they have more confidence in what they're doing."

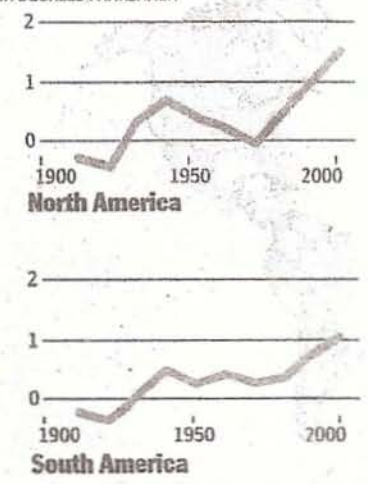
The authors concluded that

Warming Trends

An international consortium o were "very likely" caused by hu continue with drastic results.

Degrees above average, by decad
Reflects how much warmer each decade w

IN DEGREES FAHRENHEIT



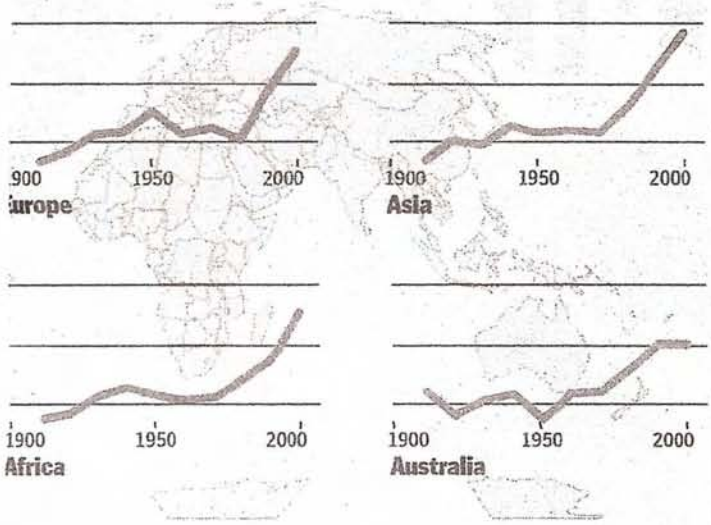
SOURCE: Intergovernmental Panel on Climate Chan

Aircraft exhaust fumes have been tied

urb Global Warming

entists reported that rising temperatures around the globe
ı activity and that the warming will almost certainly

npared with the average global temperature between the years 1901 and 1950.



THE WASHINGTON POST

BY DANIEL BEREHULAK — GETTY IMAGES

ı global warming.

Earth's average temperature will increase between 3.2 and 7.8 degrees Fahrenheit over the next century, while sea levels will rise between seven and 23 inches.

IPCC scientists also said that global warming will not trigger a shutdown within the next 100 years of the North Atlantic ocean current that keeps Northern Europe temperate, though they do not predict whether it might occur in future centuries. In a similar vein, the authors said they did not have sophisticated enough computer models to project how much melting of the Greenland ice sheet would boost sea levels over the next century, but they suggested that over several centuries the ice sheet's disappearance could raise sea levels by a devastating 23 feet.

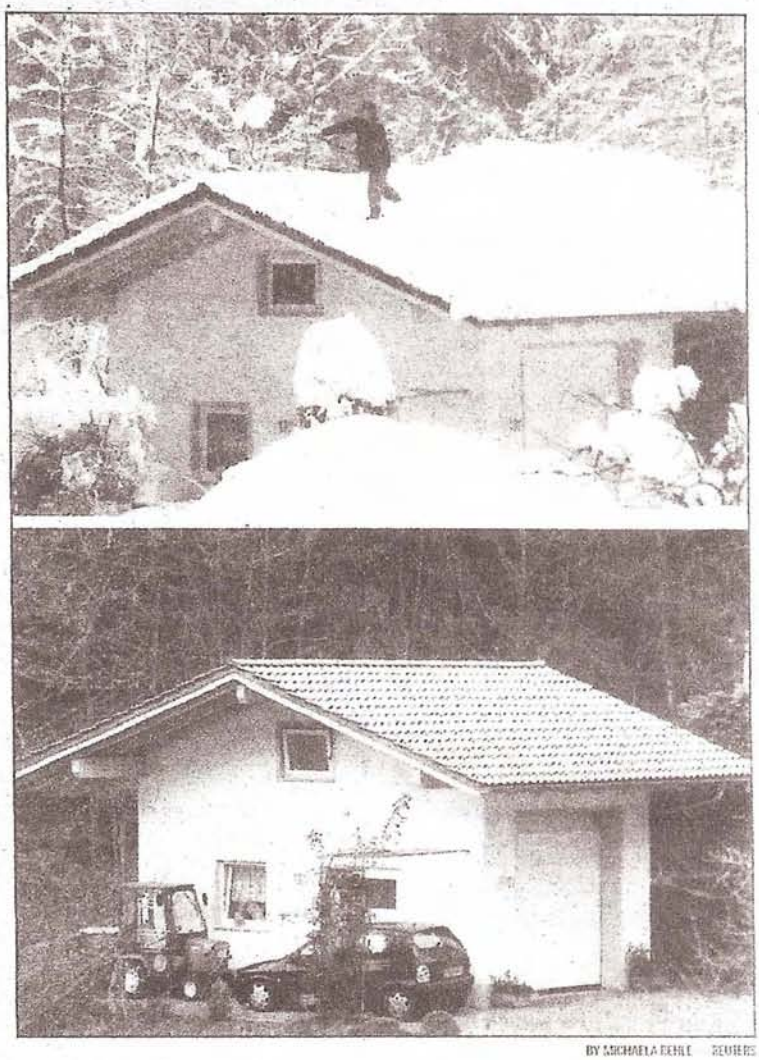
yesterday that they welcomed the report and emphasized that U.S. research funding helped underpin its conclusions. National Oceanic and Atmospheric Administration Administrator Conrad C. Lautenbacher Jr., who oversees much of the nation's climate research, said in an interview that the international assessment will lead to "a more objective and informative public debate."

But environmental advocates said the White House — which remains opposed to mandatory limits on U.S. carbon emissions — is making a mistake in assuming research and technological advances alone will address global warming.

"The administration's proposals are at least a decade away," said Angela Anderson, vice president for climate programs at the National Environmental Trust. "The promise of better technologies tomorrow shouldn't stop us from doing what we can today."

House and Senate Democratic leaders back a cap on greenhouse gases and hope to enact such legislation this year; next week, several of the report's authors are to testify in congressional hearings.

In an interview yesterday, House Science and Technology Committee Chairman Bart Gordon (D-Tenn.)



BY MICHAELA REHLE — REUTERS

A man removes snow from the roof of his house in Mietraching, Germany, in February 2006. The same house, below, pictured last month, illustrates the mild winter most of Europe is having. The Intergovernmental Panel on Climate Change has assessed the human link to global warming.

finitive world statement" on climate change that, if anything, was too conservative. "It's time to end the debate and act," Gordon said. "All the naysayers should step aside."

Some critics, however, question the push for nationwide limits on emissions from power plants, automobiles and other industrial sources. At the George C. Marshall Institute, a think tank that receives funding from Exxon Mobil, chief executive William O'Keefe and President Jeff Kueter issued a statement urging "great caution in reading too much" into the report until the panel releases its detailed scientific documentation a few months from now.

"Claims being made that a climate catastrophe later this century is more certain are unjustified," they said, adding that "the underlying state of knowledge does not justify scare tactics or provide sufficient support for proposals ... to suppress energy use and impose large economic burdens on the U.S. econ-

Turn The Mill Around Campaign
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