

SPPI News Search 8-15-08

Coal research group head says carbon storage over emphasized as near term solution (OnPoint, 06/19/2008)

<http://www.eenews.net/tv/transcript/825>



With the Department of Energy making an 11th hour decision to rework its FutureGen carbon capture and storage project, and issues with investors mounting, is interest in CCS technology waning? During today's OnPoint, Ben Yamagata, director of the Coal Utilization Research Council, gives his take on how Congress should include CCS in upcoming climate change legislation. He explains why he believes DOE should pursue both the original version of FutureGen and the new version in order to address both near- and long-term issues. Yamagata also addresses some of the key public acceptance and investor confidence issues surrounding CCS technology.

Monica Trauzzi: Welcome to OnPoint. I'm Monica Trauzzi. Joining me today is Ben Yamagata, director of the Coal Utilization Research Council. Ben, thanks for coming on the show.

Ben Yamagata: Thank you for having me. It's a pleasure being here.

Monica Trauzzi: Ben, at a recent forum Duke Energy's Jim Rogers said that the idea of carbon capture and storage has been oversold. It's being touted as sort of a magic pill when it's not. Has an accurate picture been painted about the future implementation of carbon capture and sequestration technology?

Ben Yamagata: I think there has been a lot of discussion about it and, unfortunately, when you get into situations where you're talking about massive pieces of legislation or whatnot, I think there is a tendency for both sides to over-exaggerate what's possible from a technical perspective. Our view is that it's important for political leaders to think about technology about development as a process of crawling, then walking, then running. And on the one side, I think in context of what Jim Rogers has said, there's too much focus on the running at this point. And we really need to think about taking the first baby steps before we lope into a full-charge gallop on this stuff. And so I would say, yeah, I would agree that at least certain elements of it who want to have this happen very quickly have overblown the possibility of when all of this can happen, not can it happen, which is an important distinction here, but when it's going to happen.

Monica Trauzzi: Is that something we saw in the Lieberman-Warner bill with the targets that were there?

Ben Yamagata: I think that there was an element of that, sure. You know, we talked about in the context of Lieberman-Warner, like the substitute that Chairman Boxer provided and that was discussed on the Senate floor a couple of weeks ago, there's too much emphasis on the notion that if we give coal enough money it will have a place in the energy universe. And I think the real issue that we have to focus on, and I don't see the Congress yet focusing on this, and that is to think about coal as part of making climate work. And what I mean by that is the discussion, too much, has been on we'll provide enough allowances, for example, and use those allowances to provide enough financial or otherwise incentives to protect the industry. Well, that's really only a piece of the issue here. The real issue is, and you heard it in the debates, seems to be one is what are we going to do with India and China? The second one, which I thought was very illuminating, perhaps even for the entire Senate, was the enormous cost of what we're trying to do here. I mean financially, both to the economy, to jobs, to the manufacturing sector, etc. And in the context of all of that, the way I think we should be thinking about coal and technology is India and China are

going to use coal. They need technology to use it to address the carbon footprint question. We're the ones that can help provide that. That is a solution to the climate issue. It's not trying to help coal, to think of it in that context. In the context of the economy, if coal is the least expensive form of fossil fuel right now, which it is, it can remain the least expensive form of electric power generation if we do smart things in developing technology. And so looking at the economy issue, looking at the international issues in the context of the climate debate, if we think about coal as being part of making climate work, it's a better way of thinking about it than simply saying we need to help coal.

Monica Trauzzi: So, what's at the top of your agenda heading into the next congressional session then?

Ben Yamagata: I think, from our perspective, it is to make certain that the verbiage, if you will, that Jim Rogers and others have talked about is put into context. Not his necessarily, because I thought he was making a fair statement, but that we help policymakers and their staffs understand that we know how to do this. And I think everyone who understands the technology, both the capture piece of it and the sequestration piece of it, would agree that we know how to do it. What we don't know how to do is put it all together in an integrated fashion. And in doing so, and in giving us enough time to do so, we bring down the cost of all of that while we learn how to do it. Again, this goes back to the issue of crawling/ walking/running. If we don't know how to do that, or do it in that sequence, we're either not going to have the technologies ready when they're needed or they're going to cost too much and therefore they won't be used.

Monica Trauzzi: Is interest in CCS waning though? And this sort of stems from DOE's decision on FutureGen and all the discussion we've been seeing recently, investors maybe aren't as confident as they were previously. So, are we seeing sort of a step back from CCS?

Ben Yamagata: I don't think we're seeing a step back as much as an attempt to be more informed about what can be done and how soon. And to the extent that that's happening, that's very healthy. We shouldn't be promising something that is going to raise expectations and thinking we're going to accomplish something that we're not going to accomplish, at least not in a timely fashion or in a least cost or least expensive fashion. So, I doubt that we're seeing a waning in CCS. I mean there are environmental groups out there that are also saying that it's overblown and I think that the proof is really on the other side. That is, we know how to deal with CO₂. The oil industry in particular has been doing it for years. We need to do larger and larger volumes of it. We need to learn how to capture it and still produce economic power. So it's that integration issue, not just in the integration of capturing CO₂ while it's being formed in the electric generation process, but capturing it, compressing it, putting it in pipes, and sending it to some type of geologic storage or enhanced oil recovery. And that's going to take some time and money.

Monica Trauzzi: Does the new FutureGen project do that? Do you think that the new project is going to help achieve those goals?

Ben Yamagata: I think that both the new FutureGen project and the current FutureGen project, depending on how you ...

Monica Trauzzi: Right.

Ben Yamagata: ... how you look at that, both of them can address that. They really address different goals, frankly, because what I call FutureGen plan B is really an attempt to say, look, we need to help those entities out there who are ready to do something now. That's different than looking at FutureGen plan A, which said, look, we need to know how to do a million tons a year, lots of electric production, and think about new technology that's going to be applied. I thought, and still do believe, they serve different purposes, both of them are very important. We need to incentivize and assist the type of technology that we know how to do today. At the same time, we

need to provide incentives for tomorrow's technology. I thought FutureGen plan A deals with tomorrow's technology, really, and FutureGen plan B deals with technology we should be applying today.

Monica Trauzzi: So, is there a better way for the government to be spending their money, A or B?

Ben Yamagata: The government should be spending money in both places. We have a plan that is a two-part program and it says we should have a much, much more robust research development demonstration program, really on the order of magnitude of \$17 to \$20 billion dollars over the next 18 or 19 years. Because we want to get to really inexpensive power, coincident with the capture of CO₂. At the same time, we want a second program that says let's start doing things now. Part of the problem that we've got right now is while Congress and everyone else has this discussion about what are we going to do about carbon capture and control and whatnot, we're losing really valuable time and we should be doing things right now that starts the process of letting us learn by doing. This is part of my crawl/walk/run process. And while we're debating all of this we're losing a year, two years, four years. And four years from now, unfortunately, we may not be in any better spot knowing what we're going to do with the technology than we are today. And that would be a shame, because we're losing valuable time. The government can help there just by providing the kind of incentives that we've talked about.

Monica Trauzzi: And that's a big question now. What do we do in the interim before this technology is commercially viable? You have environmental groups who are opposing the construction of any new coal-fired power plant.

Ben Yamagata: Right.

Monica Trauzzi: So, what does this mean for the coal industry and electric reliability for the next 10, 15 years, until this technology does exist?

Ben Yamagata: Well, I think that we've got to get realistic about that too, and that is coal has a place, like renewables, like nuclear, like energy efficiency. And we need to be developing all of these. When you say what are we going to be doing now? We need to be doing things now. Congressman Boucher just introduced a bill that looks really at imposing a fee on the industry that's self-imposed. Others in the Congress are looking at tax incentives. That's one of the things that we've been proposing. And even in the climate debate that happened a couple of weeks ago several senators, Senator Dorgan and Senator Enzi, had proposals or amendments that I thought were much more realistic in looking at what do we need to do and what could be done right now to do that. So, the real answer to your question is we need to do things now. We need to get it done and we need to get started. We need to at least do that.

Monica Trauzzi: OK. So, beyond the technological hurdles there's some major investment and public perception issues at this point. Do you think that these hurdles are going to be more difficult to overcome than the technological hurdles? How do you go to a neighborhood here on tell someone that you want to push carbon under their house or close to their home? You know, are these public perception issues going to get in the way of the implementation of the technology?

Ben Yamagata: Well, first of all, I don't know, because I'm not schooled in that particular piece of it, how close you're going to get to neighborhoods as you say. But let's just assume ...

Monica Trauzzi: There has been a lot of public opposition.

Ben Yamagata: ... that there's opposition or there could be opposition to that, which is, you know, you get scared from things you don't understand. So, you have perceptions about bad things happening if you put pressurized, supercritical CO₂ in a saline reservoir that happens to be a half a mile underneath the earth.

Monica Trauzzi: It sounds scary to me.

Ben Yamagata: Well, all of the experience, of course, shows that that doesn't come up, where you've had a situation years ago in Africa with a natural occurring CO₂ venting. But I think the point here is, is we have to be very careful about educating the public and not leave it to others to do that. The government has to be involved. I think industry has to be involved. I think the environmental and NGO community all have to be involved. If we're truly of the view that we need to use coal and that CCS is viable, which I happen to think it is, then it is all of our obligation to make sure that the public is satisfied that they are secure and safe when we start putting CO₂ into deep, geologic formations underground. You also mentioned the financial community. I think it's important that, as I said before we need to convince the financial community. And why would never be skeptics out there for heaven sakes?

Monica Trauzzi: It's a big investment you're asking people to make.

Ben Yamagata: It's a huge investment that you're asking people to make and so, again, for those folks on Capitol Hill and other places who are saying we need to do this quickly. For example, we've had these large debates about industries can do 85 percent carbon capture right now. And this is one of the things I suspect utilities CEOs are concerned about, I'm concerned about it, and that is, we might be able to do it. It's going to cost the electric consumer 60 to 90 percent more in their electric rates if we try to do that right now. So, it's not a question of can we do it, we can probably do it. It's going to be an enormous cost. That is not something the financial community is going to want to invest in, so we've got to bring that cost down. We can do it, at least that's what our technologists say, we can. And in doing so, we will create a better environment; both an investment environment and we'll create a better societal environment for accepting all of this. It's going to take some time.

Monica Trauzzi: I would love to go on, but we're out of time.

Ben Yamagata: It's a great pleasure being here.

Monica Trauzzi: A fascinating discussion. Thanks for coming in.

Ben Yamagata: Thank you very much.

Monica Trauzzi: This is OnPoint. I'm Monica Trauzzi. Thanks for watching.

U.S. on verge of grand-scale blackout

<http://www.kansascity.com/business/story/747498.html>

By MARK WILLIAMS

The Associated Press

JOE KOHEN | The Associated Press

Five years ago, bystanders gathered in Times Square in Manhattan after a blackout in New York. The overall health and capacity of the nation's transmission grid remain a problem.



Five years after the worst blackout in North American history, the country's largest utilities say the U.S. power system faces the prospect of even bigger and more damaging outages.

The specific flaws that led to 50 million people losing power in 2003 have largely been addressed, they say, but even bigger problems loom. Excess generating capacity in the system is shrinking, for example, and power-plant construction has slowed as costs to build and operate plants have soared.

At the same time, it is estimated that electricity use will increase 29 percent between 2006 to 2030 — much of it driven by residential growth, according to a government report issued in June.

"I'm really not a 'Chicken Little' player, but I worry that no one seems to be focusing in on this," said Michael Morris, chairman, president and chief executive of **American Electric Power**, which runs the nation's largest electricity transmission system.

Morris said massive outages this year in South Africa, which forced gold, diamond and platinum mines to stop production for five days, should serve as a warning to the United States.

Industry experts back Morris and say there is even more resistance to building new plants because of the debate over climate change and opposition to new transmission lines. The blocking of two coal-fired plants in Kansas is one example of the resistance.

"The level of excess capacity has shrunk ... to a level barely within the planning toleration of the industry," said Marc Chupka, with the **Brattle Group**, an energy consultant.

The blackout five years ago today shut off power to vast swaths of the Northeast and Midwest for as much as four days. Rolling blackouts continued in Ontario for a week. The outages caused as much as \$10 billion in damages to the U.S. economy.

FirstEnergy Corp. of Akron, Ohio, which got the blame for the spread of the outages, has worked to shore up its transmission system. But the larger issues of the country's total generating ability and the overall health and capacity of the transmission grid remain a problem, the experts say.

Rick Sergel, president of the **North American Electric Reliability Corp.**, the agency that oversees the nation's power grid, said, "We're to the point where we need every possible resource: renewables, demand response and energy efficiency, nuclear, clean coal — you name it, we need it. And we especially need the transmission lines that will bring the power generated by these new resources to consumers."

Construction of coal-fired generating plants has almost stopped, and new nuclear plants are years away, if they are approved at all, said Arshad Mansoor, vice president of power delivery and use for the **Electric Power Research Institute**. Better efficiency will go only so far, he said.

Morris, of American Electric Power, sees a potentially dire situation ahead, including the sort of power rationing that occurred in South Africa.

"It would ruin the economy," Morris said.

DOHERTY: NEW SCIENTIFIC DATA JUSTIFIES REPEALING GLOBAL WARMING RESPONSE ACT

<http://www.politickernj.com/bguhl/22291/doherty-new-scientific-data-justifies-repealing-global-warming-response-act>

By [bguhl](#) - August 14, 2008 - 1:48pm
Release Date: Aug 14 2008

DOHERTY: NEW SCIENTIFIC DATA JUSTIFIES REPEALING GLOBAL WARMING RESPONSE ACT

URGES STATE TO HOLD OFF ON DAMAGING NEW REGULATIONS AS CLIMATE CHANGE THEORIES CLASH

Responding to various new scientific reports questioning the concept of global warming, Assemblyman Michael Doherty today called on Governor Corzine to hold off on proposing any new regulations associated with the state's Global Warming Response Act and urged the Legislature to repeal that act when it returns to legislative business after Labor Day.

"There are many credible members of the scientific community who have questioned the theory of global warming, and now we have some scientists actually suggesting the earth's temperatures may be entering a period of dramatic cooling," said Doherty, R-Warren and Hunterdon. "With this growing level of scientific uncertainty, it makes no sense to enact a new set of economically damaging regulations prompted by the global warming hysteria of recent years."

The Global Warming Response Act was signed last year by Corzine, which requires the state to reduce greenhouse gas emissions 20 percent by 2020 and 80 percent by 2050. The law required the state Department of Environmental Protection to release a report detailing how the state would meet the goals, with recommendations now expected to be issued this fall.

According to recent news reports, a top observatory that has been measuring sun spot activity predicts that global temperatures will drop by two degrees over the next 20 years as solar activity slows and the planet drastically cools down. They suggest this could potentially herald the onset of a new ice age. Following the end of the sun's most active period in over 11,000 years, the last 10 years have displayed a clear cooling trend as temperatures post-1998 leveled out and are now decreasing.

Earlier this year, John Coleman, the founder of *The Weather Channel*, stated that manmade global warming is "the greatest scam in history," adding, "I am amazed, appalled and highly offended by it. Global Warming; It is a scam." Coleman said the theory of global warming is based on fraudulent science.

"New Jersey's tax and regulatory climate is already chasing jobs from this state left and right and these new regulations will make matters worse," Doherty said. "Rather than conforming our policies to questionable scientific theories, we should be looking at the concrete economic indicators that show our state's economy is in trouble. And we should be taking steps to *help*

people who are losing jobs and being forced out of their homes by this state's anti-economic growth agenda – not making matters worse.”

Suddenly being green is not cool any more

http://www.timesonline.co.uk/tol/comment/columnists/guest_contributors/article4474202.ece

As the credit crunch bites, environmental policies are being ditched. But oddly we are doing better at saving the planet

August 7, 2008

Alice Thomson

Julie Burchill can't stand them. According to her new book, *Not in my Name: A Compendium of Modern Hypocrisy*, she thinks all environmentalists are po-faced, unsexy, public school alumni who drivel on about the end of the world because they don't want the working classes to have any fun, go on foreign holidays or buy cheap clothes.

Michael O'Leary, the chief executive of Ryanair, agrees. In an interview with Rachel Sylvester and me, he told us that the “nutbag ecologists” are the overindulged rich who have nothing better to do with their lives than talk about hot air and beans.

So the salad days are over; it's the end of the greens. Where only a year ago the smart new eco-warriors were revered, wormeries and unbleached cashmere jeans are now seen as a middle-class indulgence.

But the problem for the green lobby isn't that it has been overrun by “toffs”: it's the chilly economic climate that has frozen the shoots of environmentalism. Espousing the green life, with its misshapen vegetables and non-disposable nappies, is increasingly being seen as a luxury by everyone.

Only a year ago, according to MORI, 15 per cent of those polled put the environment in their top three concerns. That figure has dropped by a third to 10 per cent this month. Now that people are fighting for their own survival rather than their grandchildren's, they put crime, the economy and rising prices at the top of their list.

According to Andrew Cooper, director of the research company, Populus: “There is a direct correlation between how people perceive the economy and the importance they place on the environment. When times are tough people resent paying more to salve their conscience.” This means that fewer people are now buying organic chickens from smart supermarkets when they can pay £3.99 at Lidl. With all food prices rising, the organic market is being credit-crunched. Demand for it grew by 70 per cent from 2002 to 2007; now it has stalled, according to the consultancy Organic Monitor.

The vast new organic Whole Foods Store on Kensington High Street in London is so quiet you can hear the cheese breathe in the specially designed glass room. Meanwhile the demand for takeaway pizzas and McDonald's has risen as people find the cheapest way to eat.

When David Cameron became leader of the Conservative Party he said that green issues were at the top of his agenda. His slogan for the local elections last year was “Vote Blue, Go Green”. But in the past few months he has realised that voters have lost the appetite for their greens.

He has only given one environmental speech since Christmas. Once he used to talk about putting a £3,000 windmill on top of his house. Now the message is not about conserving the planet but preserving his bank balance. He wears catalogue clothes, grows his own vegetables and holidays barefoot in Britain because it is less extravagant, not because he is trying to reduce his global footprint.

In fact, when the Tory leader's bicycle was stolen a week ago, the message of the story was not how green he was for riding his bike, but how broken our society has become when a politician finds his bike nicked from under his nose.

Boris Johnson was the first to realise that the tolerance for green taxes may have peaked. When he became Mayor of London, he dropped plans to charge a £25 congestion fee on gas-guzzling cars.

The Tories have quietly been reviewing many of their green policies. A range of measures designed to penalise motoring and other polluting activities has been put on hold in case they alienate families struggling to pay their bills. A proposal to tax the highest emitting cars up to £500 more than the greenest vehicles has been quietly shelved, as has the plan to raise taxes on short-haul flights. Instead George Osborne, the Shadow Chancellor, has promised to cut tax on fuel when oil prices rise.

Gordon Brown has also stopped discussing his solar panels and compost heap in Scotland and is trying to dissociate himself from local council rubbish taxes - even though they have been driven by central government plans to put up landfill charges.

Both parties are looking at ways of rewarding people for being green rather than penalising them for throwing out their yoghurt pots with their teabags. Mr Osborne, in a speech last month, admitted: "When people are feeling the pinch, we need to make it pay to go green. Instead of being fined for not recycling, households should be paid for recycling."

When Barack Obama first decided to run for the presidency, he embraced the green cause. Al Gore's film, *An Inconvenient Truth*, about global warming had just become the biggest grossing documentary in history and Mr Gore had won the Nobel prize. But recently Mr Obama has been talking more about thrift than trees. Instead of showing off his recycling skills, he explains that his children don't receive Christmas or birthday presents.

It's not just the economic downturn that has harmed the green order. People have become wary of environmental causes that can turn out to do more harm than good. They don't want wind turbines marching across Britain's moors when nuclear power stations can do more to reduce greenhouse gas emissions. They worry that washing and bleaching all those non-disposable nappies may be damaging the ozone layer, that the massive incentives for biofuels have distorted the world food market, and that green taxes are actually stealth taxes.

But paradoxically, just as Britain is turning its back on the environment, the country is finally becoming greener. Fewer people are moving house so they are buying fewer new white goods such as washing machines and fridges. They may not be queueing up for £9 organic Poilâne bread, but for the first time in a decade they are discarding less food. They buy less impulsively and think more carefully before their weekly shop. Children are wearing hand-me-down uniforms rather than new ones made in sweatshops.

Bottled water sales have fallen. Garden centres have reported a 10 per cent rise in the sales of vegetable seeds in the past 12 months. People are saving money by growing their own potatoes and carrots. They are turning off their central heating for a few more months of the year and

ditching their second car rather than buying an electric runaround. And instead of carbon-offsetting their holidays, they are simply going on fewer of them.

It's the downturn that has made greenery look unappetising - but it may yet prove to do more than anything to save the planet.

August 07, 2008, 7:00 a.m.

Drilling in Silence
Coats of many solid research.

<http://article.nationalreview.com/print/?q=YzU1N2QoMmQxMjNmOTMxZGZmODNiZGZhOWEzNzhlZTc=>

By Joel Alicea

Imagine my surprise, as a slightly befuddled intern trapped in the whirlwind of energy-policy research, when I found definitive and rather humorous proof that several decades of established economic theory contradicted core liberal doctrine.

It all began after weeks of debate over whether Congress should lift its bans on drilling for oil offshore and in the Alaskan National Wildlife Refuge (ANWR). Sen. Barack Obama and his liberal allies on Capitol Hill proclaimed the hallowed truism that “we can’t drill our way out of higher gas prices.”

But after Martin Feldstein, Harvard economics professor and a Reagan administration chairman of the Council of Economic Advisers, pointed out the serious flaws in this notion in a *Wall Street Journal* [oped](#), my immediate boss (Newt Gingrich’s research director) asked me to dig up some more research on the matter.

The professor’s basic position came from simple economic theory: If you increase supply, you will lower prices, or at least decrease the rate of price inflation. But just as importantly, Feldstein claimed that even future increases in supply can have an immediate impact on oil prices, because buyers and sellers take expected changes into account when making decisions.

In my research, I happened upon study entitled “[The Effect of Opening Up ANWR to Drilling on the Current Price of Oil](#).” The study’s conclusion was a stunning vindication of Feldstein’s position:

If an amount of newly discovered oil is significant enough to reduce prices in the future . . . [this indirectly] reduces the current price of oil just as if there were a reduction in the marginal costs of extracting oil now.

I immediately fired off an e-mail to the study’s lead author, Morris Coats, requesting more information on the subject.

I was curious why the study appeared on a website for unpublished work, and I soon found the answer: It was rejected by *The Energy Journal*, a prestigious academic journal of resource economics.

But why? Was the analysis flawed? Was this censorship another example of academia’s leftward slant?

No. When Dr. Coats sent me his [rejection letter](#), part of it read:

I regret to say that we will not be able to publish this work. Basically, your main result (the present impact of an anticipated future supply change) is already known to economists (although perhaps not to the Democratic Policy Committee) . . . It is our policy to publish only original research that adds significantly to the body of received knowledge regarding energy markets and policy.

The letter is a spectacular indictment of the anti-drilling position. It reveals the stunning chasm between the ideas economists have taken for granted for decades and what liberal politicians view as established fact. If Democratic politicians actually believe that drilling won't reduce prices immediately, they are stuck in a mentality that expired as long ago as the 1930s.

— *Joel Alicea, a junior at Princeton University, is from El Paso, Texas. He is currently interning for Newt Gingrich at the American Enterprise Institute in Washington, D.C*

OPINION – Wall Street Journal
We Can Lower Oil Prices Now
By MARTIN FELDSTEIN
July 1, 2008; Page A17

<http://www.nber.org/feldstein/wsj07012008.html>

Although most experts agree that financial speculation was not responsible for the surge in the global prices of food and energy, many people remain puzzled about the source of these remarkable price rises. Economics offers a simple supply-and-demand explanation and reason for optimism about the future of commodity prices. In the case of oil, economics also suggests how policy changes today that affect the future could quickly lower the current price of oil.

We all know that rising incomes in China, India and the Gulf states have increased the demand for oil and many other commodities. But how could the modest, one-year rise of these demands lead to 100% increases in the prices of oil and other commodities? Let's take a look first at perishable agricultural commodities.

Corbis In the short run, there is little scope for increasing the supply of corn in response to a global increase in demand. For demand and supply to balance – for the market to clear – the price of corn must rise.

If the demand for corn were very price-sensitive, a relatively small increase in price would reduce global demand by enough to offset the initial rise in demand. However, since demand is actually quite insensitive to price in the short run, it takes a very large price rise to bring global demand into line with supply.

Here is a simplified picture of what happened in the past year. The quantity of corn demanded by high-growth countries rose gradually, increasing eventually by an amount equal to, say, 10% of the previous total global level of corn consumption. Since the supply of corn did not increase, the price had to increase enough to reduce corn consumption in other countries by 10%. If it takes a 10% increase in the price to reduce

the quantity of corn demanded in the first year by just 1%, it would take a 100% increase in the price of corn to offset the initial 10% rise in the quantity of corn demanded. In reality, the picture is complicated by the substitution in both supply and demand among different agricultural commodities, and by the role of the corn ethanol program. But the basic explanation holds: With a very low short-run price sensitivity of demand and little scope to raise supply in the short run, even a relatively small increase in corn demand by the high-growth economies can lead to a very large short-run rise in the price of corn.

Fortunately, the price sensitivity of both demand and supply will increase with time. This implies that the rising demand from China and other countries may eventually be accommodated with a price lower than today's level.

The situation for oil is more complex, but the outcome for prices is potentially more favorable.

Unlike perishable agricultural products, oil can be stored in the ground. So when will an owner of oil reduce production or increase inventories instead of selling his oil and converting the proceeds into investible cash? A simplified answer is that he will keep the oil in the ground if its price is expected to rise faster than the interest rate that could be earned on the money obtained from selling the oil. The actual price of oil may rise faster or slower than is expected, but the decision to sell (or hold) the oil depends on the expected price rise.

There are of course considerations of risk, and of the impact of price changes on long-term consumer behavior, that complicate the oil owner's decision – and therefore the behavior of prices. The Organization of Petroleum Exporting Countries (the OPEC cartel), with its strong pricing power, still plays a role. But the fundamental insight is that owners of oil will adjust their production and inventories until the price of oil is expected to rise at the rate of interest, appropriately adjusted for risk. If the price of oil is expected to rise faster, they'll keep the oil in the ground. In contrast, if the price of oil is not expected to rise as fast as the rate of interest, the owners will extract more and invest the proceeds.

The relationship between future and current oil prices implies that an expected change in the future price of oil will have an immediate impact on the current price of oil.

Thus, when oil producers concluded that the demand for oil in China and some other countries will grow more rapidly in future years than they had previously expected, they inferred that the future price of oil would be higher than they had previously believed. They responded by reducing supply and raising the spot price enough to bring the expected price rise back to its initial rate.

Hence, with no change in the current demand for oil, the expectation of a greater future demand and a higher future price caused the current price to rise. Similarly, credible reports about the future decline of oil production in Russia and in Mexico implied a

higher future global price of oil – and that also required an increase in the current oil price to maintain the initial expected rate of increase in the price of oil. Once this relation is understood, it is easy to see how news stories, rumors and industry reports can cause substantial fluctuations in current prices – all without anything happening to current demand or supply.

Of course, a rise in the spot price of oil triggered by a change in expectations about future prices will cause a decline in the current quantity of oil that consumers demand. If current supply and demand were initially in balance, the OPEC countries and other oil producers would respond by reducing sales to bring supply into line with the temporary reduction in demand. A rise in the expected future demand for oil thus causes a current decline in the amount of oil being supplied. This is what happened as the Saudis and others cut supply in 2007.

Now here is the good news. Any policy that causes the expected future oil price to fall can cause the current price to fall, or to rise less than it would otherwise do. In other words, it is possible to bring down today's price of oil with policies that will have their physical impact on oil demand or supply only in the future. For example, increases in government subsidies to develop technology that will make future cars more efficient, or tighter standards that gradually improve the gas mileage of the stock of cars, would lower the future demand for oil and therefore the price of oil today.

Similarly, increasing the expected future supply of oil would also reduce today's price. That fall in the current price would induce an immediate rise in oil consumption that would be matched by an increase in supply from the OPEC producers and others with some current excess capacity or available inventories.

Any steps that can be taken now to increase the future supply of oil, or reduce the future demand for oil in the U.S. or elsewhere, can therefore lead both to lower prices and increased consumption today.

Mr. Feldstein, chairman of the Council of Economic Advisers under President Reagan, is a professor at Harvard and a member of The Wall Street Journal's board of contributors.

August 06, 2008, 8:50 a.m.

Knights of the Planet Gore

<http://article.nationalreview.com/?q=N2UzNmU4NmI1Y2M3Yzg3MmE1NjU4NWQxZGM1OTI1ZjI=>

McCain and Obama came to Michigan this week touting two all-too-similar energy plans.

By Henry Payne

Detroit — The presidential fuel follies came careening into Michigan this week, advertising two knights battling over America’s energy future. Upon closer inspection, however, the fix appears to be in: Underneath the rhetorical weaponry, both knights are wearing the same green armor.

Barack Obama arrived first at Michigan State to give a typically [grandiose speech](#) outlining his plan for a “complete transformation of our economy.” The Arrogant One has been trying to make up to Michigan since he presumed a year ago to tell her how to make cars (a come-on that went over like a lead balloon) and then blew off her January Democratic primary. Since then, Obama has paid visits laden with armfuls of bouquets and soothing pander.

The Democratic nominee-in-waiting arrived for his speech outlining our post-oil, post-SUV future in three gigantic, gas-guzzling SUVs. Then — taking a cue from Al Gore — Obama mounted the stage to declare a ten-year goal of ending our “addiction to oil” . . . or at least the oil from “the entire Middle East and Venezuela” (he also declared an end to war, and to human aging).

He said he would “not pretend we can achieve (his goal) without cost, or without sacrifice.” And then he pretended that we could, promising that his “new energy economy . . . will create new businesses, new industries, and millions of new jobs. Jobs that pay well. Jobs that can’t be outsourced. Good, union jobs.”

The centerpiece of this new Obamatopia was his prediction that “we will get one million, 150 mile-per-gallon plug-in (electric) hybrids on our roads within six years.” Or approximately seven percent of new car sales. To put this “prediction” in perspective, consider that:

In 2001, Toyota and Honda introduced the first gas-electric hybrid models (the Prius and Insight). Seven years later, there are 16 hybrids on the market accounting for just *3 percent* of all vehicle sales. “That’s a real stretch,” said David Cole, director of Michigan’s Center for Automotive Research (CAR), upon learning of Obama’s forecast.

A plug-in car is not yet in production. GM and Toyota are both targeting 2010 for their market debuts, but both companies are struggling with the lithium-ion technology at the heart of those battery-powered vehicles.

Even assuming Obama’s omniscience, an electricity-based market growing that fast will put increasing strains on the U.S. power grid. Yet, in his MSU speech, Obama also called on the “American people to meet the goal of reducing our demand for electricity 15 percent by the end of the next decade.” Considering that the federal Energy Information Agency predicts an 18 percent increase in electricity consumption during that time — even before you add on electric car demand — it’s hard to see how Obama squares his circle.

That was just the beginning. Obama brought a Christmas bag of goodies to Michigan. To purchase all those new plug-in vehicles that don’t yet exist, Obama promised a \$7,000 federal tax credit — more than doubling the current federal subsidy. And he promised that they would be built “right here in the state of Michigan,” which begs the question of whether the \$7,000 credit would be limited to American vehicles (currently, the \$3,000 credit goes mostly to Toyota Priuses made in Japan, the status symbol of American liberals).

He promised \$4 billion in guaranteed loans for U.S. auto companies, which sounded impressive until CAR’s Cole reminded a *Detroit News* reporter that General Motors just lost \$15 billion in the second quarter alone.

Perhaps most intriguing was Obama’s proposed wealth transfer from one fossil-fuel giant to another: Big Oil to Big Auto. Obama ripped into Exxon-Mobil for making “the largest profit in the history of the United States. This is the company that, last quarter, made \$1,500 every second. That’s more than \$300,000 in the time it takes you to fill up a tank with gas that’s costing you more than \$4-a-gallon.”

As punishment Obama proposes a windfall profit tax on Big Oil that will, in part, go to “helping the auto industry re-tool.” Heaven forbid that General Motors ever turn a profit again.

Obama’s comprehensive energy prescription was in part a response to the beating he’s been taking from McCain on the issue, with the Arizona senator ridiculing his opponent for opposing offshore drilling and touting tire-pressure checks as a fuel-saving measure.

Arriving in Michigan one day after Obama, McCain and his supporters were determined to stay on the offensive. Though McCain made no public appearances, his visit to Detroit Edison’s Fermi nuclear plant south of Detroit was a dramatic statement that he sees nuclear as a realistic solution to America’s energy needs. An editorial in my newspaper, the *Detroit News*, pointed to Michigan polls that “support the Arizona Republican’s positions calling for the building of 45 new nuclear power plants and allowing oil drilling off of the nation’s coasts.”

Michigan Republican Party Chairman Saul Anuzis hammered Obama for his insistence on auto job-killing, mandated fuel-mileage standards (so-called CAFE laws). “That shows how out of touch he is with Michigan voters,” thundered Anuzis. “He’s pandering to San Francisco liberals and environmentalists who would just as soon we not have cars.”

Yet, those words of support only highlight McCain’s similarities to Obama. On CAFE, for example, McCain himself has been no friend to the auto industry. In 2002, he co-sponsored a bill [with John Kerry](#) hiking mileage mandates by 30 percent — a proposal that ultimately became law last year over loud Big 3 protests. On drilling, McCain quickly steps on his message of “oil independence” by opposing drilling in ANWR — just as his opponent does.

As for nuclear power, McCain’s strategy has serious flaws — beginning with the fact that the candidate doesn’t seem to know the difference between electricity and motor fuel. As the *Detroit Free Press* reported, McCain “believes that adding 45 nuclear reactors in the United States will help reduce dependence on foreign oil.” But nuclear energy is used for powering homes, not cars. Fuel oil, even if it were replaced by more nukes, makes up just 1.6 percent of U.S. electricity generation.

Furthermore, nukes have become [expensive to build](#), in part due to onerous regulation by McCain’s Senate colleagues (as well as other factors). While constructing a new coal plant costs about \$1,500 per kW, a new nuclear plant will cost anywhere from \$4,000 to \$6,000 per kW (though, once built, nuclear is the cheapest source of electricity *generation*). As a result, the only way to construct nuke plants is with massive federal subsidies or the re-regulation of utilities (Detroit Edison will only build another reactor if Michigan guarantees restoration of its monopoly status). Aren’t those Democratic solutions to energy policy?

Upon arrival in Michigan, McCain’s traveling companion, Sen. Lindsey Graham (R., S.C.) pointed out that France gets 80 percent of its energy from nukes. Said Graham: “My message here today is that we should take our lead from the French. I never thought I’d say that.” There was more irony than Graham probably wanted: A Republican was praising a French government that had nationalized its utilities under one company and then mandated that it build nuclear power.

Ultimately, McCain’s soft-spot for nuclear is because it’s not coal: America’s most abundant — and cheapest — energy resource. It is an aversion that McCain shares with Senator Obama, because both candidates are, at root, global-warming alarmists.

And global warming alarmism is not good for the state that they are wooing.

Unmentioned in the media coverage of sparring energy plans is that both candidates are ardent supporters of federal cap-and-trade laws. Writing for the Mackinac Center, a Michigan think tank,

author Deneen Borelli [reports](#) that “the economic cost of a cap-and-trade bill would hit Michigan especially hard. The increase in energy costs would compound the loss of manufacturing jobs in the state and reduce the disposable income of Michigan residents.”

An American Council for Capital Formation study of this year’s Lieberman-Warner cap and trade bill found that “Michigan would lose 37,400 to 56,260 jobs in 2020 and 91,490 to 121,786 jobs in 2030” and electricity prices would increase by 126 percent to 177 percent.

Obama and McCain are fighting for the affection of industrial states like Michigan, each touting their own government plan to put America on the proper green-energy course. But the closer one looks at their handsome gifts, the more they look like Trojan horses hiding armies of government regulation.

— *Henry Payne is a writer and editorial cartoonist for the Detroit News.*

Enviromania

http://online.wsj.com/article/SB121807001342018983.html?mod=todays_columnists

By DANIEL HENNINGER

August 7, 2008; Page A11

For years, hyperactive environmentalists have burned votive candles to the spirit in the sky, hoping she'd levitate energy prices high enough to make alternatives to oil economically feasible. That day has come. Result: The oil has hit the fan.

With gasoline over \$4 and with life as they love it in the suburbs being shut down, did people call for the windmills? Nope. A heavy majority want to drill the bejeezus out of anywhere in America we can find familiar black slop.

No one has been hit harder by this unexpected truth than Nancy Pelosi and her green brigades.

Fearful of an up-or-down vote on drilling for oil in, of all places, our own country, the Pelosi House and Harry Reid's Senate shut down Congress. House Minority Leader John Boehner calls drilling the greatest issue Republicans have had in his political lifetime. A party flat on its back is ready to run on oil pumps.

Why stop there?

Republicans shouldn't settle for making the world safe for SUVs. What's going on here is about more than \$4 gasoline.

When Nancy Pelosi and the Democrats spent a week holding the people's chamber under house arrest, they made plain a political vulnerability beyond drilling. To achieve greenhouse gas goals in the out-years, they are willing to risk a slowdown now in the American economy. How else can you interpret what happened this week? These Democrats aren't environmentalists. They're enviromaniacs.

An environmentalist with two feet on the planet is someone who admits that fixing what economists call "externalities," such as air pollution or climate effects, requires a balance between those goals and protecting the productive economy.

An enviromaniac is the sort of person who would say: "Breaking our oil addiction . . . will take nothing less than a complete transformation of our economy." The *complete* transformation of our economy?

So said Democratic presidential candidate Barack Obama in his major energy statement this Monday. Though the speech had hedged bows to oil, coal and nuclear, it was overwhelmingly a Goreian jeremiad about "building" a new economy on a promise called renewables.



"We can see shuttered factories open their doors to manufacturers that sell wind turbines and solar panels that will power our homes and our businesses," he said. "We can watch as millions of new jobs with good pay and good benefits are created." This will "meet our moral obligations to future generations."

Whoa. "Millions" of new jobs building solar panels and wind turbines, and this is to "meet our moral obligations?"

Virtue aside, here's the biggest problem with Sen. Obama and Democratic enviromania: It's a risky roll of the dice with the U.S. economy.

The economy we've got works. We *know* that carbon makes the U.S. economy run like a Swiss watch (transportation, distribution, production, commuting). The bet between carbon inputs and growing American outputs is virtually 1:1.

Mr. Obama and his Democratic colleagues in Congress want a "complete transformation" of an already successful economy. Not partial. *complete*. Can any of them say what the odds are that all this economic activity, including the nation's electrical grid, will work as well with their new fuels? Assuredly, growth's odds aren't as good as the ones we have now.

Sen. Obama: "I will not pretend we can achieve [my goals] without cost or without sacrifice." Might this mean foregoing some GDP for five to 10 years? "Growth" appears in Mr. Obama's speech only to describe the "clean energy sector."

The problem with Democratic enviromania is that it's uncoupled from the realities of a nation whose economy has to compete now with the Chinas and Indias of the world, whose high growth rates use proven energy sources.

Republicans this fall should push their argument beyond drilling. Drilling is mainly a proxy for one's understanding of the U.S. economy. The Democrats and Mr. Obama showed this week they are so in thrall to Al Gore's big climate bet that they'd risk having a slow-growth economy. The GOP should run on High Growth America as a better bet than Democratic Slow Growth.

Instead of enviro-messianism, they should propose a drill-to-transition for whatever energy source can prove it works at a nonsacrificial price -- shale, coal gasification, nuclear, solar or some combination. (Windmill farms are a pox on the land.)

Don't be oil-industry deniers. Mr. Obama and Rep. Pelosi want to hammer and punish the only players on the field who actually know how to put massive amounts of energy on the grid. Don't

we want them using their resources to drill here, rather than off in some godforsaken place producing gushers of cash for people who want to pound us into a hole? We need Smart Oil on *our* side for at least 10 years.

Democrats this week chose the prayer of alternative energy over proven prosperity. They've handed prosperity in the here-and-now to the Republicans. Run with it.

Write to henninger@wsj.com

Congress's unsound fury over Big Oil

<http://www.csmonitor.com/2008/0807/p09s01-coop.html>

Movie theaters capture more windfall profit than oil companies.

By Justin Danhof

Christian Science Monitor

August 7, 2008 edition

Washington - With this summer's high gas prices, Americans are trading in their traditional vacations for "staycations" – vacations much closer to home.

But compared with other things Americans might do, driving is still a bargain.

Consider, for example, the costs of going to a movie:

To take a family of four to a movie at an AMC Theatre, it will cost anywhere from \$55.75 to \$71.50, depending on whether the family shares movie snacks or not, and this does not even include gasoline.

For that same \$71.50, the family could purchase enough gas for their car (of decent gas mileage) to drive from Disneyland to Las Vegas and back again. And for the price of tickets and extra-large refreshments, , they could drive from Disneyland to the Grand Canyon and back again.

Where are the calls for federal investigation into price gouging at concession stands?

For years, populist politicians have dragged oil industry executives to Capitol Hill and accused them of price manipulation. Every time gas prices increase, liberal lawmakers direct the Federal Trade Commission to investigate oil industry price gouging. To their chagrin, the FTC has never found oil industry price manipulation.

What evidence does congress use to back their price gouging claims? Try none.

In 2005, Sen. Maria Cantwell (D) of Washington responded to a question on whether she believed oil companies were price gouging, "[a]bsolutely." she said. "I just don't have the document to prove it."

And this past May, in a speech on the House floor, Rep. Debbie Wasserman Schultz (D) of Florida targeted oil company executives when she said, "I can't say that there's evidence that you are manipulating the price, but I believe that you probably are."

Shouldn't we demand more from our politicians than unfounded accusations?

These congressional hearings are often followed by attempts to impose so-called windfall profits taxes on oil companies. The process is reminiscent of the medieval practice of trial by ordeal, in which the accused are subjected to a painful – possibly fatal procedure – with the expectation that the truly innocent will be saved.

So far, the oil companies have survived. The most recent attempt to impose such a tax on "unreasonable" profits failed in June.

And just what do congressional advocates of a windfall profits tax consider unreasonable?

In the first quarter of 2008, Big Oil had a profit margin of 7.4 percent. Over that same period, the pharmaceutical and medicine industry earned a 25.9 percent profit, the chemical industry earned 15.7 percent and the electronic equipment industry earned 12.1 percent.

What about those movie theater refreshments? Four large popcorns and four large sodas cost \$31.50. The total raw ingredient cost is approximately \$7.56. That equals a 76 percent gross margin. Where is the political outrage over that figure?

Still believe it is the oil companies gouging us? Speaker Nancy Pelosi seems to.

Ms. Pelosi has called oil company profits "obscene," and recently supported yet another measure to investigate alleged oil industry price gouging.

Let's take a look at where each dollar spent at the pump goes. In the first quarter of 2008, the majority – 70 cents – was spent to purchase crude oil, 17 cents was spent on refining and retailing, and 13 cents on paying taxes.

American oil companies cannot change the largest factor influencing gasoline prices – the cost of crude oil.

In The New York Times, columnist Edmund L. Andrews asked satirically last year "if the oil industry is so powerful, why did it let gasoline prices fall through the floor throughout the 1980s and part of the 1990s? For that matter why did it let gasoline prices fall sharply after they spiked in 2005 and 2006?"

Pelosi never decried this "obscene" lack of profits and shareholder abuse. Instead, she seeks to punish an industry that makes a modest profit margin on a high demand good.

• *Justin Danhof is a research associate with the National Center for Public Policy Research, a nonpartisan, nonprofit educational foundation based in Washington.*

APA Wants to Greenwash Brains

<http://www.globalwarming.org/node/2513>

Paul Chesser, Climate Strategies Watch
August 14, 2008

[Paul Chesser, Climate Strategies Watch](#)

Ever read a story and think, "I can't believe what I'm reading?" I had that experience this morning when I read [this report](#) in *USA Today*, with the headline 'Psychologists determine what it means to think 'green:'



Armed with new research into what makes some people environmentally conscious and others less so, the 148,000-member American Psychological Association is stepping up efforts to foster a broader sense of eco-sensitivity that the group believes will translate into more public action to protect the planet.

"We know how to change behavior and attitudes. That is what we do," says Yale University psychologist Alan Kazdin, association president. "We know what messages will work and what will not."

During a four-day meeting that begins today in Boston, an expected 16,000 attendees will hear presentations, including studies that explore how people experience the environment, their attitudes about climate change and what social barriers prevent conservation of resources....

From one research presentation:

News stories that provided a balanced view of climate change reduced people's beliefs that humans are at fault and also reduced the number of people who thought climate change would be bad, according to research by Stanford social psychologist Jon Krosnick.

His presentation will detail a decade of American attitudes about climate change. His new experiment, conducted in May, illustrates what he says is a public misperception about global warming. He says there is scientific consensus among experts that climate change is occurring, but the nationwide online poll of 2,600 adults asked whether they believe scientists agree or disagree about it.

By editing CNN and PBS news stories so that some saw a skeptic included in the report, others saw a story in which the skeptic was edited out and another group saw no video, Krosnick found that adding 45 seconds of a skeptic to one news story caused 11% of Americans to shift their opinions about the scientific consensus. Rather than 58% believing a perceived scientific agreement, inclusion of the skeptic caused the perceived amount of agreement to drop to 47%.

American Psychological Association leaders say they want to launch a national initiative specifically targeting behavior changes, including developing media messages that will help people reduce their carbon footprint and pay more attention to ways they can conserve. They want to work with other organizations and enlist congressional support to help fund the effort....

I don't think I really need to add any other commentary other than that now the "greening of education" doesn't stop at the grade school-through-college vehicles -- it can be legitimately called an all-out propaganda effort that will include brainwashing by psychoanalysts.

Moulin Ruse

<http://co2science.org/articles/V11/N33/C1.php>

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Background

In his book *An Inconvenient Truth*, Al Gore states (on page 192) that seasonal meltwater in Greenland is "believed to keep sinking all the way down to the bottom, cutting deep crevasses and vertical tunnels that scientists call 'moulins'," such that "when the water reaches the bottom of the ice, it lubricates the surface of the bedrock and destabilizes the ice mass." Likewise, in their book *Dire Predictions: Understanding Global Warming*, Michael Mann & Lee Kump write (on page 98) that this lubrication allows "large pieces of ice to slide quickly into the ocean," which they say "could lead to a far more rapid disintegration of the ice sheets than predicted by any current models."

What was done

In a study designed to investigate this important subject, van de Wal *et al.* "present ice velocity measurements from the major ablation area along the western margin of the ice sheet."

What was learned

"Within days," as the Dutch researchers describe it, "ice velocity reacts to increased meltwater production and increases by a factor of 4," which response is even stronger and faster than previously reported. *However*, as they quickly add, "over a longer period of 17 years, annual ice velocities have decreased slightly," i.e., by about 10%.

What it means

In what amounts to a major rebuff of the claims of Gore and Mann & Kump, the seven scientists say that "in earlier work (Lemke *et al.*, 2007; Zwally *et al.*, 2002), it has been suggested that the interaction between meltwater production and ice velocity provides a positive feedback, leading to a more rapid and stronger response of the ice sheet to climate warming than hitherto assumed," but that their results "are not quite in line with this view." In fact, they say that their observations suggest that "the englacial hydraulic system adjusts constantly to the variable meltwater input, which results in a more or less constant ice flux over the years," such that the phenomenon "may have only a limited effect on the response of the ice sheet to climate warming over the next decades," with their data suggesting that that "limited effect" might actually be to *slow* rather than *hasten* ice flow to the sea.

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Reviewed 13 August 2008

Three Decades of Modeling Climate Sensitivity to CO₂

<http://co2science.org/articles/V11/N33/EDIT.php>

Volume 11, Number 33: 13 August 2008

We still can't predict future climate responses at low and high latitudes, which constrains our ability to forecast changes in atmospheric dynamics and regional climate. Thus states the subtitle of the Bernard Haurwitz Memorial Lecture presented by NASA Senior Scientist David Rind of the Goddard Institute for Space Studies at the 16th Conference on Atmospheric and Oceanic Fluid Dynamics, which was held on 25-29 June 2007 in Santa Fe, New Mexico (USA) and published in the June 2008 issue of the *Bulletin of the American Meteorological Society* (Rind, 2008).

Rind begins his review and analysis of this important subject by noting that Charney *et al.* (1979) concluded that global temperature sensitivity to a doubling of the atmosphere's CO₂ concentration was "between 1.5° and 4.5°C," while noting that since that time "we have not moved very far from that range." In addition, he reports that uncertainty in our assessment of high- and low-latitude climate sensitivity "is also still as great as ever, with a factor of 2 at both high and low latitudes."

As to why this is so, Rind lists a number of separate problems. For one thing, whether the water vapor response to warming employed by climate models "is realistic is hard to assess," as he puts it, "because we have not had recent climate changes of the magnitude forecast for the rest of this century" to test it against. Closely associated are low-latitude difficulties related to modeling both low- and high-level clouds in the tropics and the physics and dynamics associated with them, plus high-latitude difficulties associated with cryosphere feedbacks related to sea ice and snow cover.

One approach to dealing with these uncertainties has been to suggest, in Rind's words, that "we can have greater confidence in the multi-model mean changes than in that of any individual model for climate change assessments." However, he says "it is doubtful that averaging different formulations together will end up giving the 'right' result," since "model responses (e.g., tropical land precipitation) can often be of different signs, and there can be little confidence that averaging them together will produce a better result."

Rind thus concludes that "at this point, we cannot determine the low- and high-latitude sensitivities, and *we have no real way of obtaining them* [our italics]," which unknowns, in his opinion, "affect the confidence we can have in many of our projections of atmospheric dynamic and hydrologic responses to global warming."

Because of these and a host of other complexities he discusses, Rind states that "forecasting even the large-scale response to climate change is not easy given the current uncertainties," and that "regional responses may be the end result of varying influences in part due to warming in different tropical and high-latitude regions." Hence, it would seem to us there is little reason to put much confidence in the types of local projections climate alarmists typically use to promote fears about what those projections portend.

As to what Rind's analysis of the climate modeling enterprise suggests about the future, he writes that "real progress will be the result of continued and newer observations along with modeling improvements based on these observations," which is a conclusion we can readily endorse, as it clearly and rightly indicates that modeling improvements should be based on "continued and new observations," which *must* provide the basis for evaluating all model implications. So difficult will this task be, however, that he says "there is no guarantee that these issues will be resolved before a substantial global warming impact is upon us." However, because of the large uncertainties -- *and unknowns* -- surrounding many aspects of earth's complex climatic system, there is also no

guarantee there even will *be* any "substantial global warming impact" due to a doubling, *or more*, of the air's CO₂ content. And this *fact* suggests to us that the massive world-economy-altering measures that are being promoted by Al Gore and James Hansen to "solve" a "climate crisis" *that may not even exist* are preposterously premature and, therefore, ill-advised at best and actually dangerous in the extreme.

Sherwood, Keith and Craig Idso

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Eastern Gotland Basin, Central Baltic Sea

http://co2science.org/data/mwp/studies/12_gotlandbasin.php

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Description

The authors analyzed five 60-cm sediment cores that were retrieved from the eastern Gotland Basin of the central Baltic Sea (56°55'-57°15'N, 19°20'-20°00'E) for a variety of physical, chemical and biological properties. These analyses revealed, in their words, that "during the Medieval Warm Period, from about AD 900 to 1250, the hydrographic and environmental conditions were similar to those of the present time," although analyses of lignin compounds in the sediment cores -- which they say "can be used to characterize terrigenous organic matter from plants" -- pointed to the Medieval Warm Period possibly being *warmer* than the Current Warm Period.

Animals (Frogs) -- Summary

<http://co2science.org/subject/a/summaries/frogs.php>

Back in 1995, schoolchildren in Minnesota discovered a number of frogs that had more than their normal complement of hind appendages. Further investigations revealed other abnormalities: missing limbs, twisted jaws and declining populations all around the globe. Was it checkout time for toads? The end of the world for amphibians? A harbinger of even more terrible things about to descend on the rest of the biosphere?

As described in our Editorial of [1 June 1999](#), no speculation was too great for the fertile imaginations of scientists and journalists alike. The resultant and ever-so-popular *frog-as-canary-in-a-coal-mine* hypothesis linked the observations of deformed and dying swamp things to all sorts of environmental perturbations: to the widespread pollution of lakes and rivers caused by pesticides, to enhanced and more-hazardous ultraviolet radiation caused by presumed CFC-induced thinning of the ozone layer, to even the has-to-be-happening warming of the globe believed to be driven by mankind's CO₂ emissions.

Stepping back from this particular problem, it is almost axiomatic that when knowledge is lacking in any given area, hypotheses abound; and a theory may be as great a prod to remedial action as are facts. That is why a little knowledge is a dangerous thing; it can mistakenly point one in the wrong direction, giving an urgent sense of righteous zeal to a course of action that in a more enlightened environment might even be realized to be inimical to one's own welfare.

Fortunately, there is a proven means for dealing with such problems: *science*. Plodding along, one observation after another, experiment after experiment, and meticulous measurement after meticulous measurement, its trained practitioners slowly but surely acquire new facts that either buttress or bulldoze initial ideas relative to perceived problems. And in the case of the frenzy over frogs, new information began to constrain the types of hypotheses that might logically be offered as explanations for the creatures' sorry state.

In a story in the 30 April 1999 issue of *Science*, for example, contributing correspondent Virginia Morell (1999) asked "Are Pathogens Felling Frogs?" Her comprehensive survey of scientific studies being conducted at various sites around the world answered this question in the affirmative. Based upon work in the United States, Central America, and Australia, Morell noted that, although "massive frog die-offs [had] for years been linked to environmental conditions," that hypothesis was beginning to look less and less tenable. Instead, she reported that "new data from Australia suggest that the real killer may be a deadly fungus."

This particular pathogen -- *Batrachochytrium dendrobatidis* -- was recognized as a lethal disease only nine months prior to the publication of Morell's report and was not even given a name until the month before her story appeared in print. However, it had been proven to kill healthy frogs in the laboratory; and by studying preserved specimens, it had been implicated "in some of the very die-offs that first raised the amphibian alarm in the United States."

So what about its link to global warming? That possibility soon seemed pretty tenuous, especially in view of the fact that both Australian and American laboratory studies had shown that the "chytrid," as it is called, is hard to grow above 30°C, and that it normally wrecks its havoc in cold and wet habitats. In fact, the decline of the once-common lowland leopard frog in Arizona remained a mystery for many years, until researchers extended their normal summer studies into the winter, when the then-unnamed pathogen was found to be decimating whole populations of the species.

No, global warming did not appear to be the cause of the dwindling frog and toad numbers it was once opined to be; and other contemporary studies also lessened the likelihood that it could be the cause of the amphibian deformities observed around the world. In another News Focus story that appeared in the very same issue of *Science*, for example, news writer Jocelyn Kaiser (1999) recounted how trematodes, a type of parasitic flatworm, were vying with various types of environmental change as the prime suspects in this case as well, based upon two research reports also published in the 30 April 1999 issue of *Science*.

In the first of these studies (Johnson *et al.*, 1999), the researchers demonstrated that the kinds of limb abnormalities and other deformities seen in frogs in natural settings could be precisely duplicated by infecting tadpoles with the trematode parasite; while the second study (Sessions *et al.* 1999) demonstrated that the pattern of duplicated limbs found in five species of frogs from twelve different localities in California, Oregon, Arizona and New York was consistent with a purely mechanical effect that had been induced in the laboratory and shown to be nearly identical with the physical perturbation caused by the presence of trematode infestation.

So was that the end of the attempt to blame global warming for the problems of frogs around the world? No, it wasn't; for two weeks *earlier*, in fact, in the 15 April 1999 issue of *Nature*, two groups of scientists -- Still *et al.* (1999) and Pounds *et al.* (1999) -- published a pair of papers dealing with an extremely complex subject: the cause of major decreases in frog and toad

populations in the highland forests of Monteverde, Costa Rica, as described in our Editorial of [21 Nov 2001](#). These diebacks -- in which 20 of 50 local species totally disappeared -- had occurred over the preceding two decades, decades that climate alarmists described as having experienced "unprecedented warming."

The frog and toad declines had also been accompanied by changes in bird and lizard populations that made the composition of the cloud-forest fauna look a lot more like that of forests further downslope; and the ecological mystery surrounding these changes captured the attention of a large sector of a public already conditioned to hearing all sorts of bad things attributed to the rising CO₂ content of earth's atmosphere. Thus, it was perhaps only to be expected that in a popular article describing the mystery's putative solution, Holmes (1999) noted that the authors of the *Science* reports made "a convincing case blaming global climate change for these ecological events," which, of course, they truly did.

Here's how the theory had developed. Still *et al.* ran a global climate model simulation for a doubled atmospheric CO₂ concentration, finding -- after what Holmes said "might seem like a lot of hand waving" -- that the absolute humidity required to create and maintain the clouds that periodically shroud the Monteverde mountain tops shifted upwards in response to this perturbation (CO₂-induced global warming, which was supposedly manifest in increasing sea surface temperatures), especially during the winter dry season when the forests there rely most heavily on the moisture they receive directly from the clouds. At the same time, the climate modelers noted an increase in a parameter they termed the "warmth index," which change implied a greater concurrent demand for evapotranspiration; and it was the combination of these two changes, i.e., an implied reduction in the amount of cloud contact with the mountain-top forest and the forest's increased need for water, that led the modelers to believe that (presumed) CO₂-induced global warming was indeed the culprit behind the observed change in environmental conditions (essentially more dry days) that were believed to be responsible for the changes in animal life documented by Pounds *et al.*

At the time of the publication of the two *Nature* papers, and for a year or more thereafter, the explanation put forth by the two groups of researchers looked pretty strong. In fact, to many it was compelling. Then, however, came the study of Lawton *et al.* (2001) that suggested something quite different, in which the authors presented what they called "an alternative mechanism -- upwind deforestation of lowlands -- that may increase convective and orographic cloud bases even more than changes in sea surface temperature do."

Lawton *et al.* began their analysis of the situation by noting that the trade winds that reach the Monteverde cloud-forest ecosystem flow across approximately 100 km of the lowlands of the Rio San Juan basin, and that deforestation proceeded rapidly in the Costa Rican part of this basin over the past century. By 1992, in fact, only 18% of the original lowland forest remained. The four scientists noted that this conversion of forest to pasture and farm land significantly altered the properties of the air flowing across the landscape. The reduced evapotranspiration that follows deforestation, for example, decreases the moisture content of the air mass; and regional atmospheric model simulations suggest (quite logically) that there should be reduced cloud formation and higher cloud bases over such deforested areas, which would also cause there to be fewer and higher-based clouds than there would otherwise be when the surface-modified air moves into the higher Monteverde region.

At this point, we thus had *two* theories from which to choose a candidate mechanism for the environmental changes that had altered the Monteverde cloud-forest ecosystem: one that was global (CO₂-induced warming) and one that was local (upwind lowland deforestation). So how was one to pick the winner?

Lawton *et al.* chose an approach that pretty much proved their case. Noting that the lowland forests north of the San Juan River in southeastern Nicaragua remain largely intact -- providing a

striking contrast to the mostly-deforested lands in neighboring Costa Rica -- they used Landsat and Geostationary Operational Environmental Satellite imagery to show that "deforested areas of Costa Rica's Caribbean lowlands remain relatively cloud-free when forested regions have well-developed dry season cumulus cloud fields," noting further that the prominent zone of reduced cumulus cloudiness in Costa Rica "lies directly upwind of the Monteverde tropical montane cloud forest." Hence, they demonstrated *by direct observation* that the effects predicted by the theory they developed did indeed occur in the real world, and that they occurred right alongside a "control" area that was identical in all respects but for the perturbation (deforestation) that produced the noted effects.

Two years later, as indicated in our Editorial of [22 Nov 2006](#), Nair *et al.* (2003) further demonstrated that the reduced evapotranspiration that followed on the heels of prior and ongoing deforestation upwind of the Monteverde cloud forest decreased the moisture contents of the air masses that ultimately reached the tropical preserve, while regional atmospheric model simulations they conducted indicated there should also have been reduced cloud formation and higher cloud bases over these areas than there were before the deforestation began; and three years after that, in a study that extended the work of Lawton *et al.* and Nair *et al.* while exploring in more detail the impact of deforestation in Costa Rican lowland and premontane regions on orographic cloud formation during the dry season month of March, Ray *et al.* (2006) used the mesoscale numerical model of Colorado State University's Regional Atmospheric Modeling System to derive high-spatial-resolution simulations that were "constrained by a variety of ground based and remotely sensed observations," in order to "examine the sensitivity of orographic cloud formation in the Monteverde region to three different land use scenarios in the adjacent lowland and premontane regions," namely, "pristine forests, current conditions and future deforestation."

This observation-constrained modeling work revealed, in the researchers' words, that historic "deforestation has decreased the cloud forest area covered with fog in the montane regions by around 5-13% and raised the orographic cloud bases by about 25-75 meters in the afternoon." In addition, they say it suggests that "further deforestation in the lowland and premontane regions would lead to around [a] 15% decrease in the cloud forest area covered with fog and also raise the orographic cloud base heights by up to 125 meters in the afternoon." These findings clearly relieve anthropogenic CO₂ emissions of any blame whatsoever for the decreases in frog and toad populations that have been experienced in the highland forests of Monteverde, Costa Rica, while placing the blame squarely on the shoulders of those responsible for the felling of the adjacent lowland forests.

Three years later, Parmesan (2006) tried once again to resurrect the idea propounded years earlier by Pounds *et al.* (1999), stating that "many cloud-forest-dependent amphibians have declined or gone extinct on a mountain in Costa Rica (Pounds *et al.*, 1999, 2005)," and that "among harlequin frogs in Central and South American tropics, an astounding 67% have disappeared over the past 20-30 years," citing Pounds *et al.* (2006) as authority for this latter contention. In carefully reviewing these claims, however, they appear to be far from conclusive, as we report in our Editorial of [29 Nov 2006](#).

In the first place, all of the extinctions and disappearances of the amphibian species to which Parmesan refers appear to have nothing at all to do with "rapid loss of habitable climate space" at the tops of mountains. In fact, as noted by Pounds *et al.* (2006), the loss of these species "is largest at *middle* [our italics] elevations, even though higher-elevation species generally have smaller ranges." In addition, as noted in an earlier review of the subject by Stuart *et al.* (2004), many of the amphibian species declines "took place in seemingly *pristine* [our italics] habitats," which had *not* been lost to global warming nor even modestly altered. Last of all, the extinctions and species disappearances appear not to be due to rising temperatures *per se*, but to the fungal disease *chytridiomycosis*, which is caused by *Batrachochytrium dendrobatidis*, as noted by both Stuart *et al.* (2004) and Pounds *et al.* (2006).

In a final attempt to circumnavigate these several dilemmas, Pounds *et al.* (2006) strove mightily to implicate global warming as the cause of *Batrachochytrium's* increased virulence in recent years. However, so convoluted and tenuous was their reasoning that they repeatedly referred to their view of the subject as being but a *hypothesis*. Also, in their paper's Supplementary Information they say their goal was merely "to stimulate thought and generate ideas concerning the altitudinal patterns of thermal environments, the recent temperature shifts, and the interactions between *Batrachochytrium* and its amphibian hosts," with the hope that "future experimental studies should examine these ideas, while also considering the influence of other climatic changes such as shifts in precipitation and humidity." Last of all, and most damaging to their thesis, was the almost unbelievable fact, as reported by Bosch *et al.* (2007), that "Pounds *et al.* (2006) did not focus on showing whether the pathogen was present, or causing disease, in the species studied, raising questions as to whether infection by *B. dendrobatidis* [was] actually involved in the observed species declines."

Clearly, the last word on this subject has yet to be written; but Pounds *et al.* (2006) nevertheless stated as *factual* that "with climate change promoting infectious disease and eroding biodiversity, the urgency of reducing greenhouse-gas concentrations is now *undeniable* [our italics]," which suggests they are *totally unwilling* to even entertain the *possibility* that a different point of view might have merit, and, we might add, a different point of view that has been substantiated multiple times with observational data.

More recently, as described in our Editorial of [11 June 2008](#), Lips *et al.* (2008) began their analysis of the possible role of historical climate change in triggering disease outbreaks of chytridiomycosis -- an emerging infectious disease of amphibians caused by the fungal pathogen *B. dendrobatidis* (*Bd* for short) -- with the statement that "amphibian populations are declining across the globe at an alarming rate, with over 43% of species in a state of decline." Noting that the role of *Bd* in these population declines "has been linked to interactions with climate change" via the *climate-linked epidemic hypothesis* (CLEH) of Pounds *et al.* (2006) and Bosch *et al.* (2007), they indicate they have some serious reservations about this idea, because, as they continue, "both field studies on amphibians (Briggs *et al.*, 2005; Lips *et al.*, 2006) and on fungal population genetics (Morehouse *et al.*, 2003; Morgan *et al.*, 2007) strongly suggest that *Bd* is a newly introduced invasive pathogen." Consequently, and "from an ethical standpoint," as they put it, they cite as the primary reason for their further study of the subject, the "need to understand, as quickly as possible, the global patterns and causes of amphibian declines to prevent further losses of biodiversity."

In pursuit of the basic knowledge required to achieve this important goal, the four researchers evaluated data pertaining to population declines of frogs of the genus *Atelopus*, as well as similar data from other amphibian species, in Lower Central America and Andean South America, based on their own work and that of others recorded in the scientific literature, seeking to determine if the documented population declines were more indicative of an *emerging* infectious disease or a *climate-change-driven* infectious disease.

In discussing their findings, Lips *et al.* (2008) said they revealed "a classical pattern of disease spread across native populations, at odds with the CLEH proposed by Pounds *et al.* (2006)," emphasizing that their "analyses and re-analyses of data related to the CLEH all fail to support that hypothesis." Quite to the contrary, they say their analyses "support a hypothesis that *Bd* is an introduced pathogen that spreads from its point of origin in a pattern typical of many emerging infectious diseases," reemphasizing that "the available data simply do not support the hypothesis that climate change has driven the spread of *Bd* in our study area."

Although the U.S. scientists make it clear that disease dynamics are indeed "affected by micro- and macro-climatic variables," and that "such synergistic effects likely act on *Bd* and amphibians," their work clearly demonstrates that the simplistic scenario represented by the CLEH -- which posits, in their words, that "outbreaks of chytridiomycosis are triggered by a

shrinking thermal envelope" -- paints an unrealistic picture of the role of global climate change in the much more complicated setting of real-world biology, where many additional factors may play even greater roles in determining amphibian wellbeing. Before concluding this Summary, therefore, we highlight the results of one such study of the subject that was published by Skelly *et al.* (2007) and described in our Editorial of [20 Feb 2008](#).

This group of seven scientists from the United States, Canada and Australia critiqued the common technique of using the "climate-envelope approach" to predict extinctions, citing as their primary reason for doing so the fact that this approach "implicitly assumes that species cannot evolve in response to changing climate," when in numerous cases they can do so very effectively. Stating that "many examples of contemporary evolution in response to climate change exist," they report that "in less than 40 years, populations of the frog *Rana sylvatica* have undergone localized evolution in thermal tolerance (Skelly and Freidenburg, 2000), temperature-specific development rate (Skelly, 2004), and thermal preference (Freidenburg and Skelly, 2004)," while noting that "laboratory studies of insects show that thermal tolerance can change markedly after as few as 10 generations (Good, 1993)." Adding that "studies of microevolution in plants show substantial trait evolution in response to climate manipulations (Bone and Farres, 2001)," they go on to say that "collectively, these findings show that genetic variation for traits related to thermal performance is common and evolutionary response to changing climate has been the typical finding in experimental and observational studies (Hendry and Kinnison, 1999; Kinnison and Hendry, 2001)."

Although evolution will obviously be slower in the cases of long-lived trees and large mammals, where long generation times are the norm, Skelly *et al.* say that the case for rapid evolutionary responses among many other species "has grown much stronger (e.g., Stockwell *et al.*, 2003; Berteaux *et al.*, 2004; Hariston *et al.*, 2005; Bradshaw and Holzapfel, 2006; Schwartz *et al.*, 2006; Urban *et al.*, 2007)." As a result, they write that "on the basis of the present knowledge of genetic variation in performance traits and species' capacity for evolutionary response, it can be concluded that *evolutionary change will often occur **concomitantly with changes in climate*** [our italics and bold] as well as [with] other environmental changes (e.g., Grant and Grant, 2002; Stockwell *et al.*, 2003; Balanya *et al.*, 2006; Jump *et al.*, 2006; Pelletier *et al.*, 2007)." And *frogs*, as noted above, are no exception to this general rule.

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Last updated 13 August 2008

Southern Hemisphere Deglacial Warming and Atmospheric CO₂ Increases

<http://co2science.org/articles/V11/N33/C2.php>

Reference

Stott, L., Timmermann, A. and Thunell, R. 2007. Southern Hemisphere and deep-sea warming led deglacial atmospheric CO₂ rise and tropical warming. *Science* **318**: 435-438.

Background

The authors write that establishing "the exact phasing of events during glacial terminations" is "a necessary step in understanding the physical relation between CO₂ forcing and climate change."

What was done

Working with a marine sediment core from the western tropical Pacific Ocean, Stott *et al.* "determined the chronology of high- and low-latitude climate change at the last glacial termination by radiocarbon dating benthic and planktonic foraminiferal stable isotope and magnesium/calcium records," which provided a temporal resolution of 25 to 50 years for each sample over the period stretching from 10 to 22 thousand years before the present.

What was learned

The researchers report that "deep-sea temperatures warmed by ~2°C between 19 and 17 thousand years before the present, leading the rise in atmospheric CO₂ and tropical-surface-ocean warming by ~1000 years."

What it means

Stott *et al.* conclude that the cause of the deglacial deep-water warming "does not lie within the tropics, nor can its early onset between 19 and 17 thousand years before the present be attributed to CO₂ forcing." And since the *rate* of deep-water warming after the start of the increase in the atmosphere's CO₂ concentration did not *increase* (if anything, it *declined*), there is no compelling reason to believe that the deglacial increase in the air's CO₂ content had anything at all to do with *any* of the warming that led to the ultimate development of the current interglacial.

Reviewed 13 August 2008

The Holocene Climate of Central Iceland <http://co2science.org/articles/V11/N33/C3.php>

Reference

Flowers, G.E., Bjornsson, H., Geirsdottir, A., Miller, G.H., Black, J.L. and Clarke, G.K.C. 2008. Holocene climate conditions and glacier variation in central Iceland from physical modeling and empirical evidence. *Quaternary Science Reviews* **27**: 797-813.

What was done

The authors applied a three-dimensional ice-sheet model to the Langjokull Ice Cap that includes a component describing glacier hydrology and thereby provides a direct link to the empirical record derived from glaciofluvial sediments deposited in proglacial lake Hvitarvatn, where intensive coring -- which yielded data on grain size, lithofacies, tephra, diatoms, total organic carbon, biogenic silica, magnetic susceptibility, wet bulk density and dropstones or ice-rafted debris -- and multi-beam high-resolution bathymetry and reflection seismic surveys were carried out from 2001 to 2005. The results of this exercise, when driven by Greenland ice-core oxygen isotope records and constrained by the implications of the sediment core data, were then used to construct a history of the climatic conditions of central Iceland throughout the Holocene.

What was learned

Flowers *et al.* say their comprehensive analyses suggest that (1) temperatures of the Holocene Thermal Maximum in central Iceland were likely 3-4°C warmer than those of the 1961-1990 period, that (2) the maximum Holocene stand of the ice cap occurred during the Little Ice Age, that (3) there was little to no ice advance into Hvitarvatn before about 1000 years before present, and (4) the lake area occupied by ice was much greater during the Little Ice Age than at any previous time.

What it means

One implication of the six researchers' findings is that it should not have been surprising to have seen the earth experience a 20th-century warming that climate alarmists like to characterize as having been "unprecedented," since during this period the planet was emerging from *the coldest period of the current interglacial*. Another implication is that it should not be surprising to see the earth continue to warm in the future, as it has not yet reached the level of warmth it experienced for a few *millennia* during the central portion of the Holocene. In addition, an equivalent degree of future warming should not have inordinately bad consequences for earth's plant and animal life, since all species living on the planet today obviously survived the much warmer temperatures characteristic of the Holocene Thermal Maximum.

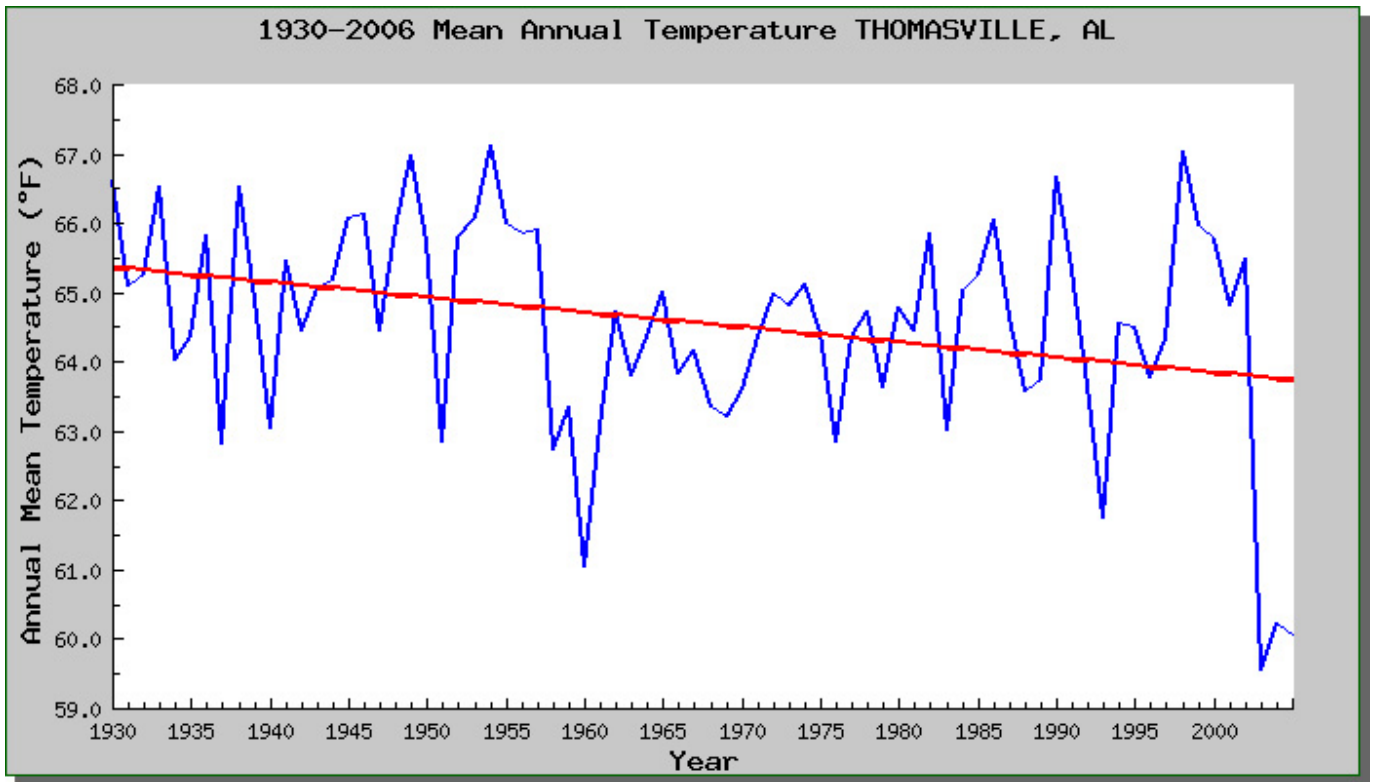
Reviewed 13 August 2008

USHCN Temperature Record of the Week: Thomasville, AL
<http://co2science.org/data/ushcn/stationoftheweek.php>

To bolster our claim that "[There Has Been Little Net Global Warming Over the Past 70 Years](#)," each week we highlight the temperature record of one of the 1221 U.S. Historical Climatology Network (USHCN) stations from 1930-2005.

This issue's temperature record of the week is from Thomasville, AL. During the period of most significant greenhouse gas buildup over the past century, i.e., 1930 and onward, Thomasville's

mean annual temperature has cooled by 1.63 degrees Fahrenheit. Not much global warming



here!

Back to [U.S. Historical Climatology Network Data Set \(USHCN\)](#)
