

ENVIRONMENTAL ENGINEERING NEWSLETTER

10 FEB. 2014

If you need older URLs contact George at ghh@att.net.

Please Note: This newsletter contains articles that offer differing points of view regarding climate change, energy and other environmental issues. Any opinions expressed in this publication are the responses of the readers alone and do not represent the positions of the Environmental Engineering Division or the ASME.

George Holliday

This week's edition includes:

1) ENVIRONMENT – A. THE SOCIAL COSTS OF CARBON? NO, THE SOCIAL BENEFITS OF CARBON

This report analyzes the impacts and benefits of carbon dioxide (CO₂) and then compares these to estimates of the social cost of carbon (SCC) that have been published by the U.S. federal government. CO₂ is the basis of life on Earth, it facilitates plant growth, and enhances agricultural productivity. It is the primary raw material utilized by plants to produce the organic matter out of which they construct their tissues, which subsequently become the ultimate source of food.

Of primary importance, the successful development and utilization of fossil fuels, which generate CO₂, facilitated successive industrial revolutions, created the modern world, and enabled the high quality of life currently taken for granted. There is a strong causal relationship between world GDP and CO₂ emissions over the past two centuries, and this relationship is forecast to continue for the foreseeable future. We compared these indirect CO₂ benefits to the SCC estimates. While the SCC estimates are of questionable validity, we nevertheless compared the CO₂ costs and benefits (on a normalized per ton basis) using the SCC estimates and assumptions. We found that the current benefits clearly outweigh any hypothesized costs by, literally, orders of magnitude: The benefit-cost (B-C) ratios range up to more than 200-to-1 (Figure AB-1). We utilized forecast data to estimate B-C ratios through 2040 and found that future benefits also greatly exceed hypothesized costs by orders of magnitude: In the range of 40-to-1 to 400-to-1. To place these findings in perspective, normally, B-C ratios in the range of 2-to-1 or 3-to-1 are considered favorable. Thus, our main conclusion is that the benefits of CO₂ overwhelmingly outweigh estimated CO₂ costs no matter which SCC estimates or assumptions are used. In fact, the SCC estimates are relatively so small as to be in the statistical noise of the estimated CO₂ benefits. These findings must be used to inform energy, environmental, and regulatory policies.

Ken Kok

Env140210

B. ENVIRONMENTAL PROTECTION AGENCY

Comment Requests:

Comment Request: Draft Supporting Materials for the Science Advisory Board Panel on the Role of Economy-Wide Modeling in U.S. EPA Analysis of Air Regulations

79 FR 6899-6900

SUMMARY: The Environmental Protection Agency (EPA) is evaluating the appropriate role for economy-wide modeling in informing the regulatory process. Toward that end, EPA is developing an "analytic blueprint" of materials on the technical merits and challenges of using economy-wide models to evaluate the social costs, benefits and economic impacts associated with EPA's air regulations. In addition, EPA will be seeking advice from the Science Advisory Board (SAB) on economy-wide modeling and will present materials from the analytic blueprint to inform a discussion of charge questions to a new SAB panel with expertise in economy-wide modeling. In a forthcoming Federal Register Notice, EPA's Science Advisory Board Staff Office will be soliciting nominations for this panel to provide advice on the use of economy-wide models to evaluate the economic effects of air regulations. In today's Notice, EPA is soliciting public comment on both the draft charge questions and draft analytic blueprint of materials that could be presented to the SAB in order to inform how to appropriately discuss the issues with the panel.

<http://www.gpo.gov/fdsys/pkg/FR-2014-02-05/pdf/2014-02471.pdf>



C.

san diego convention center
San Diego, Ca, USA
March 17-19 2014



Executive Advisory Committee:

The Executive Advisory Committee for ASME Energy Forum Live – Oil & Gas includes senior members from Shell Exploration & Production, Draper Laboratory/Cambridge Research and Technology LLC, Baker Hughes, Stewart & Stevenson, BP Exploration, and ASME.

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Shell Exploration & Production Co.

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David Paradis Weir Oil and Gas Pressure Pumping
Arnold Feldman

D. INDUSTRY GROUPS PARTNER UP AGAINST FORTHCOMING CARBON RULES

Forty trade groups wary of President Barack Obama's energy plans have teamed up to fight the proposed carbon emission rules for power plants. The Partnership for a Better Energy Future, led by the National Association of Manufacturers and the U.S. Chamber of Commerce Institute for 21st Century Energy, is concerned that the White House climate action plan could lead to the complete removal of coal from the energy mix

<http://www.reuters.com/article/2014/01/30/usa-energy-carbon-idUSL2N0L410520140130>

2) HEALTH – A. CAMPYLOBACTERIOSIS - USA: (OREGON) SHUCKED RAW OYSTERS

A ProMED-mail post

<<http://www.promedmail.org>>

ProMED-mail is a program of the

International Society for Infectious Diseases <<http://www.isid.org>>

Date: Fri 31 Jan 2014

Source: The Oregonian [edited]

<http://www.oregonlive.com/health/index.ssf/2014/01/3_sick_coos_bay_oyster_recalls.html>

Coos Bay Oyster Co. is recalling oysters over a food poisoning outbreak that has sickened at least 3 people in Oregon. The company, based in Charleston, said it is pulling all of its shucked oysters and in-shell oysters sold to retail stores and wholesalers in Oregon and California.

The shucked oysters were sold in 1/2 gallon, quart, pint and half-pint containers with sell-by dates from 15 Jan 2014 to 17 Feb 2014. The containers carry the Coos Bay Oyster Co. label and are marked raw/ready-to-eat shucked oysters. The oysters in-shell were distributed in red onion sacks, each containing 5 dozen oysters of various sizes. They, too, have the company's label, with harvest dates from December 2013 to January 2014.

The recall follows an outbreak of campylobacteriosis, one of the most common food-borne pathogens. Lab tests confirmed 3 illnesses traced to shucked oysters. All 3 patients were men, 50 to 75 years old, who consumed raw oysters between 15-20 Jan 2014, according to Oregon health officials.

They said those who were sickened purchased the oysters from 2 markets in Lane and Coos counties. The markets were not identified. Two of the patients were hospitalized but are recovering, health officials said.

The bacteria are killed by cooking. But many people prefer raw oysters. Only the shucked oysters have been confirmed to be part of the outbreak, the company said.

Oregon officials, who don't know the source of the contamination, are continuing to investigate.

[Byline: Lynne Terry]

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Communicated by:

ProMED-mail

<promed@promedmail.org>

[Uncooked oysters may be the vehicle for transmission of a variety of enteric infections, especially viral and bacterial. Campylobacteriosis is not, however, a common disease transmitted by the raw shellfish.

Shucking the oysters, that is removing them from their shells, introduces the increased possibility of direct human-related contamination. - Mod.LL

3) SAFETY – A. U.S. TO PROPOSE VEHICLE-TO-VEHICLE, CRASH-AVOIDANCE SYSTEMS

Technology Lets Cars Communicate Location, Speed and Direction With Each Other

By: Christina Rogers

Updated Feb. 3, 2014 3:57 p.m. ET

U.S. Transportation Secretary Anthony Foxx speaks during a news conference on automobile safety in Washington, DC. *Getty Images*

U.S. regulators plan to require auto makers to equip new cars and trucks with technology that allows vehicles to communicate with each other to avoid crashes.

Transportation Secretary Anthony Foxx on Monday sent a signal to the auto industry that the Obama administration is intent on pushing ahead with so-called vehicle-to-vehicle, crash-avoidance systems. He didn't say how soon such systems would be required on board new cars and trucks, however.

"Our goal is to have a proposal that will be developed before the administration closes its doors" in early 2017, Mr. Foxx said during a news conference. He said data from a Transportation Department study begun in 2012 of about 3,000 vehicles showed that the technology could help avoid collisions in between 70% and 80% of potential accident situations involving sober drivers.

Related

Auto makers and researchers have been working for years to develop crash-avoidance systems based on vehicle-to-vehicle communications. Such systems eventually could work in collaboration with technology designed to automate various driving tasks, including braking and steering.

The hardware and software for vehicle-to-vehicle communications is nearly ready for mass deployment. But auto makers and regulators have other hurdles to overcome, including establishing a big enough network of equipped vehicles for the system to work.

"What remains to be addressed is security and privacy, along with consumer acceptance, affordability, achieving the critical mass to enable the 'network effect' and establishment of the necessary legal and regulatory framework," the Alliance of Automobile Manufacturers trade group said on Monday.

Auto makers are also concerned about a possible backlash from consumers worried that their privacy will be compromised by vehicles that broadcast location and speed data.

Mr. Foxx said the data exchanged between vehicles wouldn't include identifying information. Auto makers also want to avoid getting sued if passengers riding in a vehicle equipped with crash-avoidance technology nonetheless suffer injuries in a collision.

There also could be a struggle for access to the telecommunications spectrum required for vehicle-to-vehicle systems, a fight that likely would involve the Federal Communications Commission and possibly Congress.

The vehicle-to-vehicle technology studied by the Transportation Department uses short-distance radio networks, capable of sending signals up to 300 yards, to communicate a vehicle's position, speed and direction, officials said. Vehicles could be equipped with technology to track the position of other vehicles and sound an alert if a collision was imminent, even if the oncoming car wasn't visible to the driver.

Monday's announcement marked the first major automotive rule-making initiative of Mr. Foxx, who became transportation secretary in July.

His decision to accelerate installation of advanced crash-avoidance technology signaled a broader move among vehicle-safety experts toward using technology to compensate for driver shortcomings, for example, automatic-braking systems, collision-warning systems or various types of automated driving. In the past, federal regulators concentrated more on technology, such as air bags, that was designed to protect passengers after a crash occurred.

The number of auto-related fatalities reached 33,561 in 2012, up about 1,000 from 2011 and the first increase after seven straight years of declines.

B. ASSAULT ON CALIFORNIA POWER STATION RAISES ALARM ON POTENTIAL FOR TERRORISM

April (2013) Sniper Attack Knocked Out Substation, Raises Concern for Country's Power Grid

SAN JOSE, Calif.—The attack began just before 1 a.m. on April 16 last year, when someone slipped into an underground vault not far from a busy freeway and cut telephone cables.

Within half an hour, snipers opened fire on a nearby electrical substation. Shooting for 19 minutes, they surgically knocked out 17 giant transformers that funnel power to Silicon Valley. A minute before a police car arrived, the shooters disappeared into the night.

Safety140210

4. TRANSPORTATION – A. O'REILLY V OBAMA, ROUND 2 : KEYSTONE

Published February 04, 2014

FoxNews.com

WASHINGTON –President Obama told Bill O'Reilly Monday on "The O'Reilly Factor" that he was waiting to get an official recommendation from Secretary of State John Kerry before proceeding with the Keystone Pipeline.

Obama also took issue with the number of jobs the pipeline would create after supporters said it would create tens of thousands.

"Keystone Pipeline, a new study comes in, environmental impact negligible, 42, 000 jobs.

You're going to OK it, I assume," O'Reilly asked.

Obama responded, "Well, first of all, it's not 42,000. That's not correct. It's a couple of thousand to build the pipeline."

He said the next steps in the pipeline approval process would be to get "agencies to comment on what the State Department did, publics allowed to comment, Kerry's going to, then, give me a recommendation."

On Friday, supporters and opponents of the Keystone Pipeline project both were quick to claim victories following a report released by the State Department. The oil industry and many congressional Republicans have asked the Obama administration to move forward with the project that would ship 830,000 barrels of oil a day from Canada to Texas refineries.

B. GOVERNMENT INQUIRY FINDS OIL FOR TRAINS MISCLASSIFIED

ASSOCIATED PRESS

WASHINGTON —

Government investigators have found crude oil being transported from North Dakota's Bakken region was misclassified in samples taken from 11 out of 18 truck shipments en route to rail loading stations, federal transportation officials said Tuesday.

Hazardous materials shipments are supposed to be classified into one of nine categories depending on the risk involved. If the materials are misclassified, they could wind up being shipped in less protective rail tank cars and emergency personnel might follow the wrong protocols when responding to a spill.

The Pipeline and Hazardous Materials Safety Administration said it has proposed fining three companies involved in the shipments — Hess Corp., Whiting Oil and Gas Corp. and Marathon Oil Corp. — a total of \$93,000.

"The fines we are proposing today should send a message to everyone involved in the shipment of crude oil: You must test and classify this material properly if you want to use our transportation system to ship it," Transportation Secretary Anthony Foxx said in a statement.

A runaway train with 72 tank cars of Bakken oil derailed, exploded and burned in the downtown area of Lac-Megantic, Quebec, near the Maine border in July. Forty-seven people were killed and 30 buildings destroyed.

The accident was a wake-up call for safety officials, who were surprised by its severity. Tests taken of Bakken oil since the Lac-Megantic accident shows it is more dangerous than some other types of crude. The oil in the train that derailed in Lac-Megantic was misclassified as "packing group III," which the safety administration equates to minor danger.

Some of the recently tested oil was classified as “packing group II” when it should have been “packing group I,” the most dangerous category, while other truckloads were classified as packing group III when they should have been classified as packing group II, federal officials said. Regulations require shippers have a security plan in place for packing groups I and II, but not packing group III.

Railroads in the U.S. transported nearly 234,000 carloads of crude oil in 2012, up from just 9,500 in 2008. Early data suggest that rail car loads of crude passed 400,000 in 2013, according to the Association of American Railroads.

COMMENTS:

A. THE WEEK THAT WAS: 2014-02-01 (FEBRUARY 1, 2014)

State of the Union: On an unusually cold Washington night, President Obama gave this year’s State of the Union address. Environmental groups expressed disappointment because he did not outline strong measures to “fight” global warming, which is not occurring. To understand his administration, one should not only pay attention to his words, but also realize what he omits and what his administration is doing.

Mr. Obama correctly stated that climate change is a fact. It has been ongoing for hundreds of millions of years and will continue long after he is gone. There is little governments can do to stop it. The great fear of global warming was artificially contrived. In its claim that carbon dioxide emissions endanger public health and welfare, the EPA claimed its findings are supported by science and cited three lines of evidence.

1.) EPA claims a distinct human fingerprint --a hot spot in the atmosphere centered over the tropics at about 33,000 feet. It does not exist. Satellites and weather balloons have failed to find it.

2.) EPA claims late 20th century surface global warming was unprecedented and dangerous. It was not. A similar warming occurred in the early 20th century, which was not associated with carbon dioxide. Any late 20th century surface warming stopped 16 years ago.

3.) EPA claims climate models are reliable. Climate models failed to predict that global warming would stop and greatly exaggerate the warming over the past 30 plus years.

The EPA finding that carbon dioxide endangers human health and welfare is based on failing science and sub-prime climate models that are wrong.

Mr. Obama bragged about the increase in production of oil and natural gas in the US. He is fortunate to be President during the US energy revolution. Extraction of oil and natural gas from dense shale is occurring with no help from the Administration. It is occurring on private or state controlled lands and driven by private initiatives. According to 2012 statistics compiled by the Energy Information Administration, the production of oil, natural gas, natural gas liquids and coal from Federal lands and waters all fell. The difference between what is occurring on non-Federal lands and Federal Lands demonstrates the economically punitive policies of this administration. Yet, according to reports, Mr. Obama is moving forward to further restrict oil development and mining on Federal lands.

Mr. Obama’s administration is engaged on an economically destructive war on coal. Both the EPA and the Department of Energy falsely asserted that carbon capture and storage is commercially practical. Where it has been tried, it has been under highly specialized circumstances that are not generally available –such as using carbon dioxide (CO2) to enhance recovery of oil from nearby wells. If there are no nearby wells, this application does not work.

The EPA has declared that the shutting of coal-fired power plants is not due to EPA regulations but due to coal-fired plants being economically uncompetitive with natural gas-fired plants. This is partially true. In some regions of the country where coal is expensive, such as Kentucky, natural gas is more economical for generating electricity. In regions where coal is inexpensive, such as southern Illinois and the western states such as Wyoming, the opposite is true. The EPA's CO2 emissions standards on new coal-fired power plants prevent the construction of the latest, more efficient designs for coal-fired plants. The proposed standards for existing coal-fired power plants will force the closure of more plants, many in areas where natural gas is not generally available. All this will serve to drive up the costs of electricity to industry and other consumers.

Western Europe has led the fight on global warming/climate change with dire economic results. Those industries that can are fleeing high electricity costs brought on by big commitments on renewable energy. According to Rupert Darwall, estimates by Eurostat and the US EIA on comparable electricity costs, in 2012 electricity was about 84% more costly for industrial firms and 65% more costly for households in Europe than in the US.

Countries such as Germany and the UK face unpleasant choices –subsidize electricity costs for industries or face enormous job losses. The promised Green Jobs are unsustainable without continued government subsidies and/or mandates. Now, President Obama desires to lead the US into adopting similar economically disastrous policies, without bothering to obtain Congressional approval.

Mr. Obama bragged about the increases in renewable energy, particularly solar power. According to a January 2014 report by the Energy Information Administration (EIA), the total electricity production from solar amounted to 0.2% of US electricity consumption, up ten times from what it was in 2008. By way of contrast, electric production by lumber and paper mills burning their wood waste is 4.5 times the current solar production, without the need for expensive subsidies and mandates.

Mr. Obama's administration created the Interagency Working Group on Social Cost of Carbon. From the Council of Economic Advisers to the Department of the Treasury, eleven government entities are involved in the creation of this contrived concept. These eleven entities blatantly ignore the tremendous benefits of enhanced atmospheric carbon dioxide to agriculture and the environment.

In August 2013, the White House reported that in FY 2013 US government climate change expenditures amounted to \$22.6 Billion. Based on previous reports by the GAO and the Congressional Research Service, this brings the total expenditures to over \$165 Billion since 1993. With all that money, we *did* invent some very good instruments to measure climate change, particularly from satellites; but those and other instruments are largely ignored. We now have reports that the Tropical Atmosphere Ocean array of buoys is failing for lack of funding. These buoys monitor the warming and cooling events in the equatorial Pacific, known respectively as El Niño and La Niña, which are important natural for climate change. Where has most of the \$165 Billion gone? Much has been spent on failing science, failing climate models, failing alternative energy policies, and extreme exaggerations of the human influence on climate.

Clearly, SEPP will have many issues to address in the next few years. See links under The State of the Union, Social Benefits of Carbon, Measurement Issues, EPA and other Regulators on the March, Washington's Control of Energy and Article # 2.

Social Costs (Benefits) of Carbon: On January 27 Fred Singer and Ken Haapala separately submitted their comments on the so-called Social Costs of Carbon (SCC) to the Office of Management and Budget (OMB), which is under the White House. Singer represented Virginia Scientists and Engineers for Energy and Environment and Haapala represented SEPP.

Singer pointed out the failings of the three Integrated Assessment Models being used to establish the SCC, with particular emphasis to the detailed critique by MIT Prof. Robert Pindyck, who states that the models are largely meaningless (TWTW Aug 24, Nov 23, and Nov 30, 2013).

Singer also discussed the tremendous economic benefits that occurred by replacing human and animal power with fossil fuels, as reported in a study by Management Information Systems headed by Roger Bezdek, prepared for the American Coalition for Clean Coal Electricity.

Haapala discussed the absurdity of the concept of the social cost of carbon. All life on this planet is carbon based; does life have a social cost? He also discussed the fact that the scientific basis of the EPA endangerment finding is imploding [see above], and Craig Idso's study on the benefits of carbon dioxide. The Bezdek and Idso studies are different but complementary. The former discusses the benefits in the use of fossil fuels, which result in CO2 emissions. The latter discusses the direct benefits of enhanced concentrations of atmospheric CO2. However, it is doubtful that anyone in an important position in this ideologically blinded administration will publically recognize the significance of these studies. See links under Social Benefits of Carbon.

A Step Forward, A Step Back? Marcia McNutt, Editor-in-Chief of *Science* wrote that for preclinical studies the magazine is adopting the standards recommended by the U.S. National Institute of Neurological Disorders and Stroke (NINDS) for transparency. Further, it will ask editors and reviews in other disciplines to identify papers that demonstrate transparency and instill confidence in the results. This may be used to take additional steps for implementing reproducibility guidelines. Importantly, with the advice from the American Statistical Association, and others, it will be adding members to its Board of Reviewing Editors from the statistical community to examine methods of data analysis. Hopefully, this may prevent publications of papers with internal statistical errors, such as what occurred with Mr. Mann's hockey-stick.

On a disappointing note, as linked in the January 18, 2014 TWTW, Robert Bradley had a post on Master Resource discussing an October 1, 2009 article by Richard Kerr, long time writer at *Science*. "What Happened to Global Warming? Scientists Say Just Wait a Bit." The article discussed a ten year pause in global warming as indicated in the Hadley Centre -Climatic Research Unit temperature data. The link has been taken down and the article is no longer listed under the author index. See links to the new Science policy under Seeking a Common Ground.

Not All Watts Are Created Equal: Government agencies brag about their policy successes, however, some when doing so make statements that mislead the general public. For example, the latest "Energy Infrastructure Update" report from the Federal Energy Regulatory Commission's Office of Energy Projects promotes the increase in capacity of renewables, namely wind, biomass, solar, etc. And how the installed capacity is exceeding nuclear and oil. [Due to the expense of oil, less than 1% of electricity is generated by oil, and it is used predominantly as a back-up, or in isolated situations.] The problem with these reports is they used installed nameplate capacity, not annual capacity or, more importantly, dependable capacity, which is usually termed as dispatchable capacity.

It is worth comparing nuclear power plants with wind. Nuclear can generate power 24/7 and the US fleet averages over 90% of nameplate capacity over the course of a year. It is only shut down for scheduled maintenance, thus the capacity can be considered 100% dispatchable. Based on reports from existing facilities, wind farms seldom exceed 30% of nameplate capacity, often less. Further, they experience occasions when no power is generated. The Columbia River Gorge discussed in last week's TWTW is one example. A similar analysis can be done with coal-fired or natural gas combined cycle power plants. The results are similar. It may be useful to ask the bureaucrats who write these reports, when you are riding an elevator or the subway, which type of electrical generation would you prefer? See links under Alternative, Green ("Clean") Solar and Wind

Keystone II: Once again, the State Department found that the northern leg of the Keystone pipeline that is designed to bring oil from the oil sands of Canada, and some oil from the Bakken formation in North Dakota, to refineries on the Gulf Coast will have no major adverse impact on the environment. Once again, the environmentalists are screaming environmental disaster. Once again, the report will undergo an extensive public comment period and review. Once again, many in Washington are demonstrating their cavalier disregard for projects that have been demonstrated to provide jobs and add to general prosperity, without government subsidies and mandates. It has been over five years. See links under Washington's Control of Energy.

Number of the Week: 4% For some time, TWTW has pointed out that the map of temperature trends prepared by the National Space Science and Technology Center at University of Alabama in Huntsville, using the satellite data, shows pronounced warming only in the northern part of the Northern Hemisphere, with little or no warming elsewhere over the entire satellite record. Writing in Watts Up With That, Willis Eschenbach takes this a step further. He analyzes the data for five groups, according to latitude: Polar --Arctic and Antarctic 67° to 90° North and South, Extratropics 23° N & S to 67° N & S, and Tropics 23° N to 23° S. He calculates that surface area for each is as follows: Polar 8%; Extratropics 52%; and Tropics 40%. [These satellite data do not completely cover the Polar Regions.]

Willis then calculates temperature trends for these five regions and compares the trends with actual temperatures reported by UAH. Over the entire temperature record Eschenbach finds a significant warming trend only for the Arctic --4% of the globe. Global warming of 4% of the globe! This is not a stirring rallying cry for a war against global warming, or coal.

<http://www.sepp.org/twtwfiles/2014/TWTW%202-1-14.pdf>

B. COMMITTEE ON WATER EFFICIENCY GUIDELINES

After conducting market research and determining there was interest in exploring development of technical water efficiency guidance documents, ASME established the Committee on Water Efficiency Guidelines (WEG) for Power and Other Industrial Facilities within the Standards and Certification sector charged with the development of guidance documents to promote the efficient use of water in applications within power and other industrial facilities and to aid in evaluation of technical options. Topics include, but are not limited to, cooling systems, the use of fresh and non-fresh water resources, and innovative water reuse and water recovery technologies. In 2013, during periodic teleconferences the committee established three subcommittees to tackle various aspects of its charter and is currently seeking membership.

The WEG Subcommittee on Innovative Water Conservation, Reuse, and Recovery Technologies will develop guidelines of best practices, performance assessments, and evaluation and reporting criteria in the field of innovative water conservation, reuse and recovery technologies.

The WEG Subcommittee on Use of Fresh and Non-Fresh Water Resources will develop guidelines describing the aspects of facility development based on water resources availability. This includes, but is not limited to, providing best practices, performance assessments, evaluation methods and reporting criteria for optimal use of fresh and non-fresh water.

The WEG Subcommittee on Cooling Systems will develop guidelines for best practices, performance assessments, and evaluation and reporting criteria for the efficient use and conservation of water in power plant and industrial cooling systems.

For more information on the Water Efficiency Guideline Committees, contact Fredric Constantino at constantinof@asme.org (+1.212.591.8684)

C. TWO DECADES OF OVERESTIMATED GLOBAL WARMING

Reference

Fyfe, J.C., Gillett, N.P. and Zwiers, F.W. 2013. Overestimated global warming over the past 20 years. *Nature Climate Change* 3: 767-769.

In a Commentary published in the Opinion and Comment section of *Nature Climate Change*, Fyfe *et al.* (2013) introduce their study of the subject by (1) stating that "global mean surface temperature over the past 20 years (1993-2012) rose at a rate of $0.14 \pm 0.06^\circ\text{C}$ per decade," and by (2) noting that this warming rate was "significantly slower than that simulated by the climate models participating in Phase 5 of the Coupled Model Intercomparison Project (CMIP5)." And so it was that they went on from there to look for a reason as to why such a discrepancy should exist.

The first step of the three researchers was to compute average *simulated* global temperatures only at locations where corresponding *observation* existed - which makes a lot of sense, since a person doesn't go looking for oranges in an apple orchard - and in doing so, they obtained "an average simulated rise in global mean surface temperature of $0.30 \pm 0.02^\circ\text{C}$," which was *more than twice as great* as the real-world *measured* rate of warming.

But wait! Fyfe *et al.* report that the inconsistency between observed and simulated global warming was even more striking for temperature trends computed over the past fifteen years (1998-2012), for which period they say the *observed* trend of $0.05 \pm 0.08^\circ\text{C}$ "was more than four times smaller than the average simulated trend of $0.21 \pm 0.03^\circ\text{C}$." And they also point out that the observed trend over this period, which was *not significantly different from zero*, actually suggested "a temporary 'hiatus' in global warming," further citing the studies of Easterling and Wehner (2009) and Fyfe *et al.* (2011) in this regard.

And *any* number that is divided by *zero* really *is* infinite, which suggests that CMIP5 simulations of global warming over the period 1998-2012 could in this sense *truly* - but partially tongue-in-cheek - be considered to be *infinitely* too large, which is about as wrong as it is possible to be wrong.

Additional References

Easterling, D.R. and Wehner, M.F. 2009. Is the climate warming or cooling? *Geophysical Research Letters* 36: 10.1029/2009GL037810.

Fyfe, J.C., Merryfield, W.J., Kharin, V., Boer, G.J., Lee, W.-S. and von Salzen, K. 2011. Skillful predictions of decadal trends in global mean surface temperature. *Geophysical Research Letters* 38: 10.1029/2011GL049508

D. NATURE CAN, SELECTIVELY, BUFFER HUMAN-CAUSED GLOBAL WARMING, SAY ISRAELI, US SCIENTISTS

Posted on [February 3, 2014](#) by [Anthony Watts](#)

Jerusalem, February 2, 2014 – Can naturally occurring processes selectively buffer the full brunt of global warming caused by greenhouse gas emissions resulting from human activities?

Yes, find researchers from the Hebrew University of Jerusalem, Johns Hopkins University in the US and NASA's Goddard Space Flight Center.

<http://wattsupwiththat.com/2014/02/03/nature-can-selectively-buffer-human-caused-global-warming-say-israeli-us-scientists/#more-102592>

E. THE POSITIVE EXTERNALITIES OF CARBON DIOXIDE: ESTIMATING THE MONETARY BENEFITS OF RISING ATMOSPHERIC CO2 CONCENTRATIONS ON GLOBAL FOOD PRODUCTION

Conclusion

It is clear from the material presented in this report that the modern rise in the air's CO₂ content is providing a tremendous economic benefit to global crop production. As Sylvan Wittwer, the father of agricultural research on this topic, so eloquently put it nearly two decades ago:

"The rising level of atmospheric CO₂ could be the one global natural resource that is progressively increasing food production and total biological output, in a world of otherwise diminishing natural resources of land, water, energy, minerals, and fertilizer. It is a means of inadvertently increasing the productivity of farming systems and other photosynthetically active ecosystems. The effects know no boundaries and both developing and developed countries are, and will be, sharing equally," for "the rising level of atmospheric CO₂ is a universally free premium, gaining in magnitude with time, on which we all can reckon for the foreseeable future" (Wittwer, 1995).

<http://www.co2science.org/education/reports/co2benefits/conclusion.php>

Don Shaw

F. ASME EED COMMITTEES

EED is re-establishing and re-invigorating its Administrative and Technical Committees.

These include:

- **Administrative**
 - **General Committee**
 - **Advisory Committee**
 - **Conference Committee**
 - **Honors and Awards Committee**

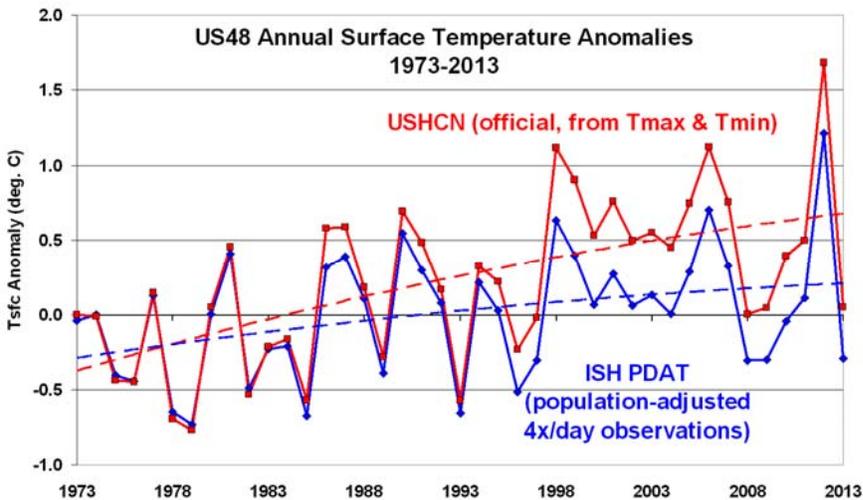
- Environmental Policy Committee
- Technical
 - Pollution Prevention
 - Environmental Remediation
 - Air Pollution Control
 - Water Pollution Control
 - Hazardous Waste
 - Radioactive and Mixed Waste
 - Environmental Communication
 - Regulations and Standards/Regulatory Engineering
 - Carbon Capture and Sequestration (CCS)
 - Environmental Liaison Committee

We are looking for individuals who want to participate in one or more of the Committee's. If you are interested or want more information please contact Arnie Feldman at jjdsenv@att.net or Robert Powers at powersr@asme.org
 Arnie Feldman

G. U.S. TEMPERATURES, 1973-2013: A ALTERNATIVE VIEW

January 24th, 2014

Steve Goddard recently posted [some results](#) from his analysis of the official U.S. surface temperatures (USHCN, from NOAA) suggesting spurious warming occurring around 1998. I also [showed evidence](#) of this previously. Also see graph below.



Roy Spencer
 Env140210-1

H. BIOBASED CHEMICAL COMPANIES SEEK RAW MATERIALS THAT CAN BEAT CORN AND NATURAL GAS

ON THE HOT, dry agricultural land of California's Imperial Valley, 17 new varieties of an unusual crop are being tested on a 100-acre plot. If the tests are successful, the valley's bounty of lettuce, cantaloupes, and broccoli may someday be joined by plants that are converted into fuels and chemicals.

The crop, energy cane, is a less sweet cousin of sugarcane. It is a perennial grass that was developed by plant scientists to create a large amount of biomass quickly. Canergy, a biofuels start-up, plans to grow enough energy cane to power one or more commercial-scale fuel ethanol plants starting in 2016.

Howard Hayden

Env140210-2

I. CLIMATE CHANGE'S INHERENT UNCERTAINTIES

January 26th, 2014

But there is an unusually good essay at Quadrant Online about the pickle climate scientists now find themselves in after selling their souls to their government masters in order to produce "scientific evidence" of human-caused climate change.

In [Climate Change's Inherent Uncertainties](http://quadrant.org.au/magazine/2014/01-02/fundamental-uncertainties-climate-change/), (<http://quadrant.org.au/magazine/2014/01-02/fundamental-uncertainties-climate-change/>) Garth Paltridge also lays out in simple terms why climate forecasts can't be trusted.

I couldn't find a single statement that I disagreed with. Which is strange, because I disagree with myself on a routine basis.

Roy Spencer

J. UK UNION URGES GOVERNMENT TO ADOPT CCS

Feb 02 2014

Unite, Britain's biggest union, and the National Union of Mineworkers (NUM) have joined forces to call on the government to embrace Carbon Capture Storage to cut energy bills, create jobs and reduce CO2 emissions.

At a conference on January 27 attended by politicians, industry experts and workers in the energy sector, the unions warned that jobs are being lost and the UK is facing a "make or break moment" if the country is to take advantage of its prime position to be a world leader in Carbon Capture technology. Speakers at the conference included Tom Greatrix MP, Peter Emery, production director for Drax and Philip Garner, director general, Coal Pro.

Failure to embrace CCS would have devastating consequences for jobs, said the unions, because of the premature closure of coal fired power stations if CCS is not deployed. 800 jobs are due to be lost at Eggborough power station in North Yorkshire. Had CCS already been in use those jobs and the power produced by Eggborough would still be viable.

The same region also includes the Drax power station and encompasses the Kellingley deep mine and is the location of the proposed White Rose CCS project. If the White Rose CCS project goes ahead the immediate short term effect would be to create over 1,000 construction jobs during a four year period as well as securing the jobs within the local existing supply chain.

Unite national officer Kevin Coyne said: “Capture carbon or lose jobs, that is our message to the government. The UK is facing a make or break moment if the country is to take advantage of its prime position to be a world leader in carbon capture technology. If the government steps up and embraces carbon capture it will cut energy bills, create jobs and reduce CO2 emissions.

“There needs to be a sense of urgency because jobs are already being lost, like those at Eggborough power station and our energy supplies are being put at risk. We hope our conference will focus minds and will be a step further towards keeping the lights on and creating jobs.”

(Editor Note: I have a hard time believing job will be save by Carbon Sequestration, since Carbon capture, Compression, and Transmission requires 25 to 40% of the power generated by the plant. GHH)

<http://www.carboncapturejournal.com/ViewNews.aspx?NewsID=3420>

K. EPA RULE CARRIES HIGH COSTS FOR COAL

Carbon capture technology, as required by Environmental Protection Agency's draft standard, would force new coal power plants to use more fuel to meet their electricity load

<http://www.ect.coop/regulatory-watch/environmental-regulation/epa-rule-carries-high-costs-for-coal/65360>

L. ENGINEER WANTS A JOB

George,

Are there any mechanical engineering jobs in the Atlanta area? My background is aircraft Environmental Control Systems and I have had some drawing experience.

Thanks,

Joe

x2frans@comcast.net

M. SOTU, 2014: OBAMA WILL USE WINTRY WEATHER AS EXAMPLE OF GLOBAL WARMING

January 26th, 2014

I predict that, despite the brutally cold weather in DC this Tuesday, Obama will preach on climate change in his State of the Union address. I predict he will even use the cold weather as evidence to support his case.

Roy Spencer

Env140210-3

N. NEW PAPER: ARCTIC AMPLIFICATION OF TEMPERATURE NOT PRIMARILY DUE TO ALBEDO CHANGES, CLIMATE MODELS NEED TO BE REWORKED

Posted on [February 3, 2014](#) by [Anthony Watts](#)

From the [Max Planck Institute for Meteorology](#): Climate changes faster in the Arctic than anywhere else on Earth, a phenomenon that is often explained by retreating snow and ice leading to more solar surface warming (positive ice-albedo-effect).

In a new study in Nature Geoscience the scientists Felix Pithan and Dr. Thorsten Mauritsen from the department “The Atmosphere in the Earth System” at the Max Planck Institute for Meteorology show that this effect is only secondary. Instead, the main cause of the high Arctic climate sensitivity is a weaker temperature feedback, due to 1) the low temperatures that prevail and 2) the increasing temperatures with height trapping warming to remain near the surface. For these reasons, the Arctic warms more in a global warming due to a forcing from e.g. CO₂ than other regions.

Some commentary sheds further light on this.

NoTricksZone points out that the German Newspaper, Spiegel, writes:

To balance out the radiation budget at an ambient temperature of 30°C, an increase of 0.16° is enough. However at minus 30°C, an increase of 0.31 °C would be needed, i.e. almost double, which gives Pithan und Mauritsen cause for thought. According to their calculations the lower start temperature in the Arctic is an important reason for the more rapid temperature increase in the Arctic compared to the tropics.”

They found that the surface albedo feedback is only the second main contributor to Arctic amplification, and that other contributions are substantially smaller or even oppose Arctic amplification.

This casts many of the assumptions made in earlier climate models deep into doubt. It’s back to the drawing board (again) for the modelers.

- See more at: <http://notrickszone.com/#sthash.K8HUQkuu.dpuf>

The paper:

Arctic amplification dominated by temperature feedbacks in contemporary climate models

Felix Pithan & Thorsten Mauritsen

Nature Geoscience (2014) doi:10.1038/ngeo2071 Received 25 November 2013 Accepted 19 December 2013 Published online 02 February 2014

Abstract:

Climate change is amplified in the Arctic region. Arctic amplification has been found in past warm¹ and glacial² periods, as well as in historical observations^{3,4} and climate model experiments^{5,6}. Feedback effects associated with temperature, water vapour and clouds have been suggested to contribute to amplified warming in the Arctic, but the surface albedo feedback—the increase in surface absorption of solar radiation when snow and ice retreat—is often cited as the main contributor^{7,8,9,10}. However, Arctic amplification is also found in models without changes in snow and ice cover^{11,12}. Here we analyse climate model simulations from the Coupled Model Intercomparison Project Phase 5 archive to quantify the contributions of the various feedbacks. We find that in the simulations, the largest contribution to Arctic amplification comes from a temperature feedbacks: as the surface warms, more energy is radiated back to space in low latitudes, compared with the Arctic. This effect can be attributed to both the different vertical structure of the warming in high and low latitudes, and a smaller increase in emitted blackbody radiation per unit warming at colder temperatures. We find that the surface albedo feedback is the second main contributor to Arctic amplification and that other contributions are substantially smaller or even oppose Arctic amplification.

<http://www.nature.com/ngeo/journal/vaop/ncurrent/full/ngeo2071.html>

O. ROBERT BRYCE: THE REAL CLIMATE 'DENIERS' ARE THE GREENS

While renewables subsidies have punished Europe, shale gas has cut U.S. emissions.

By

Robert Bryce

Feb. 2, 2014 7:13 p.m. ET

For years, greens and many on the political left have insisted that widespread adoption of renewable energy will create jobs and stimulate the economy. An example: In September 2008, then-candidate [Barack Obama](#) claimed at a speech in Golden, Colo., which his planned investments in "green" energy would create "five million new jobs that pay well and can't ever be outsourced."

It was all bunk.

Proof came last month when both the European Union and the German government announced separately that they were both rolling back aggressive subsidies and mandates for renewable energy. The reason: staggering costs. Spain has racked up some \$35 billion in debt—known as the "tariff deficit"—thanks to excessive renewable-energy subsidies. In Germany, renewable-energy subsidies are now costing German consumers and industry about \$32 billion a year. The costs have become so onerous that on Jan. 21 Germany's economy and energy minister Sigmar Gabriel told energy conference attendees in Berlin that his country is risking "dramatic deindustrialization" if it doesn't reduce energy costs.

In December, the Center for European Policy Studies, a Brussels-based think tank, reported that European steelmakers are paying twice as much for electricity and four times as much for natural gas as their U.S. competitors. In Denmark, that wonderland for wind-energy enthusiasts, residential electricity now costs about 41 cents per kilowatt-hour, more than three times the U.S. average rate.

Europe's decision to slow down on renewables suggests that the term "climate denier" needs an overhaul. For the past decade or so, this has been the label for anyone who questions climate change models or the forecasts derived from them. But the lesson from Europe is that the environmentalists who have been relentlessly hawking renewables are the real deniers.

Solar panels in Bad Hersfeld, Germany *Reuters*

They have denied the costs that renewable energy mandates impose on the European economy. They've denied the environmental benefits of increased natural gas use in the U.S. And they continue to deny the difficulty of addressing carbon-dioxide emissions on a global scale.

In December 2012, Robert F. Kennedy Jr., a senior attorney for the Natural Resources Defense Council, co-wrote an op-ed in the *New York Times* in which he claimed that Germany's solar-energy efforts should be copied by the U.S. because a "transition to renewable power could create millions of domestic jobs" and take a "substantial bite" out of America's greenhouse-gas emissions.

If Mr. Kennedy wants to continue cutting those emissions, he should be encouraging the development of shale gas. In 2013, thanks largely to the use of horizontal drilling and hydraulic fracturing in shale formations, U.S. natural-gas production averaged 70 billion cubic feet a day, a record, and a 41% increase over 2005 levels. Lower-cost gas is reducing the domestic use of coal, which is cutting emissions. The Environmental Protection Agency reports that natural-gas-fired power plants emit about half as much carbon dioxide as comparable coal-fired ones.

Thanks to the shale revolution, the U.S. is also reducing emissions faster, at far lower cost, than the EU. Between 2005 and 2012, U.S. carbon-dioxide emissions fell by 10.9%, according to the widely cited "BP Statistical Review of World Energy 2013." During the same period the EU's emissions fell by 9.9%, according to the Netherlands Environmental Assessment Agency. Nevertheless, Mr. Kennedy denounced natural gas at a visit to Franklin and Marshall College last October, calling it "a catastrophe." Bill McKibben, the founder of the environmental organization 350.org who has advocated enormous reductions in global hydrocarbon use, has made similar declarations. In a Jan. 21 op-ed in Politico that he wrote with Chesapeake Climate Action Network's Mike Tidwell, he said natural gas "needs to stay in the ground" and that it is "just coal by another name." Mr. McKibben's energy prescription? U.S. states should "double and triple their wind and solar mandates." He too believes the U.S. should follow Germany's lead. Mr. McKibben is denying the facts. Even though Germany has spent more than \$100 billion subsidizing renewables since 2000, the country's coal use is rising, as are its carbon-dioxide emissions, according to the BP Statistical Review. And Germany's coal use may continue to grow as the country turns away from nuclear power. In the wake of the Fukushima disaster in 2011, Germany shut down eight of its nuclear reactors, and it plans to retire the rest by 2022. According to an October report from energy publisher Platts, some 7,300 megawatts of new coal plants will be brought online by next year.

It's not just Germany. Global coal consumption jumped by about 55% over the past decade as demand for electricity has soared. That consumption is boosting global carbon-dioxide emissions, which have increased by 32% over that period, according to the BP Statistical Review. Relatively small reductions in carbon emissions in Europe or the U.S. won't make a significant difference amid such rapid growth. Since 2005, China alone has increased its carbon-dioxide emissions by about 3.6 billion tons, or about four times the amount Germany emitted in 2012.

The reality is simple: The U.S. is the world leader in carbon policy. It has cut carbon-dioxide emissions more effectively than the EU while generating an economic boom from the shale revolution. In October 2013, Purdue University energy economist Wallace Tyner estimated that between 2008 and 2035 the shale revolution will add an average of \$473 billion a year to the U.S. economy—or about 3% of current GDP. Using more natural gas in the U.S. sets an example for the rest of the world for economic growth, energy production and carbon dioxide. But don't bother trying to convince Messrs. Kennedy and McKibben and their allies. They would rather stay in climate denial.

Mr. Bryce is a senior fellow at the Manhattan Institute. This piece is excerpted from his forthcoming report for the institute on America's energy advantages.

O. CLAIM: DRAMATIC THINNING OF ARCTIC LAKE ICE CUTS WINTER ICE SEASON BY 24 DAYS

Posted on [February 4, 2014](#) by [Anthony Watts](#)

Arctic lakes have been freezing up later in the year and thawing earlier, creating a winter ice season about 24 days shorter than it was in 1950, a University of Waterloo study has found. But, I don't think they are paying attention to cycles like the PDO. And, in 1992, Mt. Pinatubo's eruption had global effects on lowering temperature, making their start point a cherry pick.

<http://wattsupwiththat.com/2014/02/04/claim-dramatic-thinning-of-arctic-lake-ice-cuts-winter-ice-season-by-24-days/#more-102645>

P. CRYOSAT SHOWS ARCTIC SEA ICE VOLUME UP 50% FROM LAST YEAR

Posted on [February 5, 2014](#) by [Anthony Watts](#)

Measurements from ESA's CryoSat satellite show that the volume of Arctic sea ice has significantly increased this past autumn.

The volume of ice measured this autumn is about 50% higher compared to last year. In October 2013, CryoSat measured about 9000 cubic km of sea ice – a notable increase compared to 6000 cubic km in October 2012.

<http://wattsupwiththat.com/2014/02/05/cryosat-shows-arctic-sea-ice-volume-up-50-from-last-year/#more-102678>

Don Shaw

Q. ARCTIC LAYER CAKE

Posted on [February 3, 2014](#) by [Willis Eschenbach](#)

Guest Post by Willis Eschenbach

There's a recent paper paywalled [here](#),

(<http://www.nature.com/ngeo/journal/v4/n11/full/ngeo1285.html>) called *Arctic winter warming amplified by the thermal inversion and consequent low infrared cooling to space*. Fortunately, the Supplementary Online Information is available [here](#),(

<http://www.nature.com/ngeo/journal/v4/n11/extref/ngeo1285-s1.pdf>)

and it contains much valuable information. The paper claims that during the arctic winter, the atmospheric radiation doesn't go out to space ... instead it is directed downwards, increasing the surface warming.

Now I haven't figured out yet how that works, radiation being "directed downwards". But that's what they say. From their Abstract:

<http://wattsupwiththat.com/2014/02/03/arctic-layer-cake/#more-102632>

R. U.S. DEC/JAN TEMPERATURES 3RD COLDEST IN 30 YEARS

Posted on [February 3, 2014](#) by [Anthony Watts](#)

by Roy W. Spencer, Ph. D.

NOAA image of minimum temps on Jan. 6, 2014.

Yes, Virginia, it really has been a cold winter.

The winter months of December 2013 and January 2014 averaged over the contiguous 48 United States were the 3rd coldest Dec/Jan in the last 30 years.

The analysis is based upon ~350 NOAA/NWS stations that measure temperatures every 6 hours (or more frequently), many located at airports. This is different from the official NOAA temperature product (update not yet available), which is based upon daily max/min temperatures measured at 1,000+ co-op stations. Those stations have had large adjustments made due to (among other things) changing time of observation (TOBS) over the years.

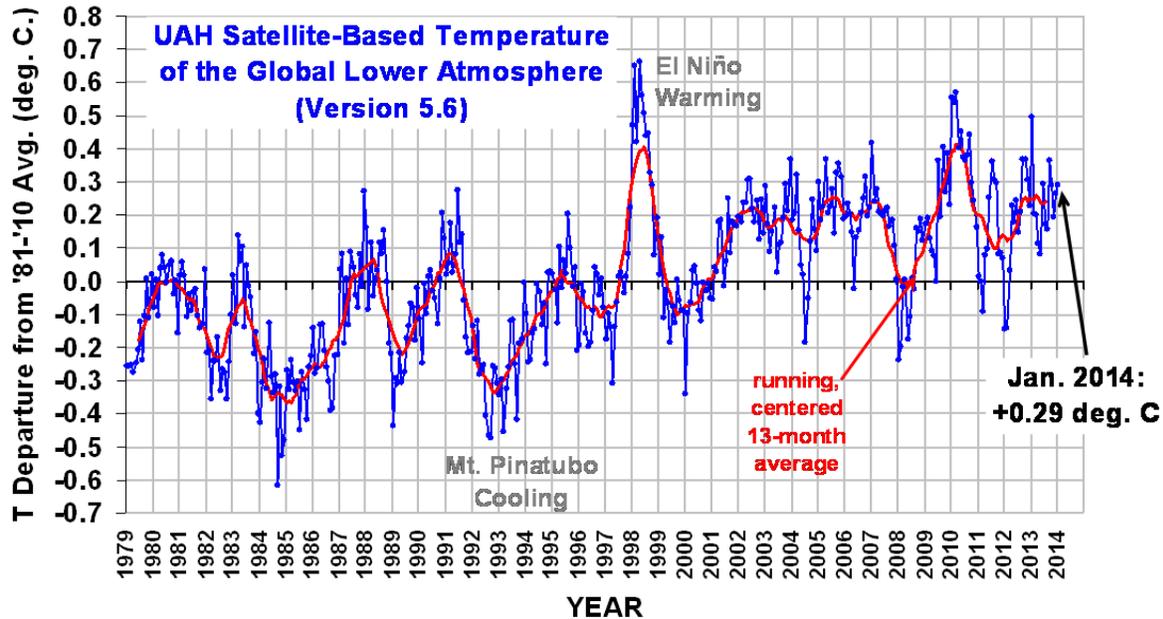
Here's a plot of the Dec/Jan averages for the last 41 years (click for large version):

<http://wattsupwiththat.com/2014/02/03/u-s-decjan-temperatures-3rd-coldest-in-30-years/#more-102597>

S. UAH GLOBAL TEMPERATURE UPDATE FOR JANUARY 2014: +0.29 DEG. C

February 5th, 2014

The Version 5.6 global average lower tropospheric temperature (LT) anomaly for January, 2014 is +0.29 deg. C, little changed from December (click for full size version):



The global, hemispheric, and tropical LT anomalies from the 30-year (1981-2010) average for the last 13 months are:

YR	MON	GLOBAL	NH	SH	TROPICS
2013	1	+0.497	+0.517	+0.478	+0.386
2013	2	+0.203	+0.372	+0.033	+0.195
2013	3	+0.200	+0.333	+0.067	+0.243
2013	4	+0.114	+0.128	+0.101	+0.165
2013	5	+0.082	+0.180	-0.015	+0.112
2013	6	+0.295	+0.335	+0.255	+0.220
2013	7	+0.173	+0.134	+0.211	+0.074
2013	8	+0.158	+0.111	+0.206	+0.009
2013	9	+0.365	+0.339	+0.390	+0.190
2013	10	+0.290	+0.331	+0.249	+0.031
2013	11	+0.193	+0.160	+0.226	+0.020
2013	12	+0.266	+0.272	+0.260	+0.057
2014	1	+0.291	+0.386	+0.196	-0.027

The global image for January is available in the [here](http://nsstc.uah.edu/climate/) (http://nsstc.uah.edu/climate/)
Popular monthly data files (these might take a few days to update):

[uahncdc_lt_5.6.txt \(Lower Troposphere\)](#)
[uahncdc_mt_5.6.txt \(Mid-Troposphere\)](#)
[uahncdc_ls_5.6.txt \(Lower Stratosphere\)](#)

Regards
George