

# **ENVIRONMENTAL ENGINEERING**

## **NEWSLETTER**

### **22 SEPT. 2014**

*This week's edition includes:*

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 editor 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 EPA SHOULD REVISE PLAN TO CUT METHANE EMISSIONS FROM OIL, GAS, SEN. INHOFE SAYS**

Sen. James Inhofe, R-Okla., on Wednesday questioned the approaches used by the Environmental Protection Agency to write white papers in proposing rules for curbing methane emissions from oil and natural gas production. Inhofe said the agency uses "outdated" information to justify the rules. "I urge the EPA to gather more information, revise the White Papers, and allow an official, robust comment period prior to engaging in any policymaking discussion that could impact the oil and natural gas industry," he wrote in a letter to Administrator Gina McCarthy.

<http://thehill.com/blogs/floor-action/senate/216707-inhofe-blasts-epa-plan-to-regulate-methane-emissions>

#### **B. MESSAGE FROM THE CHAIRMAN ASME CALL-FOR-SUBMITTALS: INNOVATIVE WATER TREATMENT AND CONSERVATION TECHNOLOGIES FOR INDUSTRIAL FACILITIES**

ASME has recently chartered a Water Efficiency Guidelines (WEG) Committee to develop guidance documents to promote the efficient use of water in power and other industrial facilities. One of the WEG subcommittees under this charter is designated to develop guidelines for best practices, performance assessments and evaluation and reporting criteria for innovative water conservation, reuse and recovery technologies. In that regard, this ASME Subcommittee on Innovative Water Conservation, Reuse and Recovery Technologies is soliciting industry input for development of a list of innovative water treatment and conservation technologies. This input will be in the form of a brief (no more than two pages) narrative describing the innovative equipment and/or innovative use of existing equipment (i.e. fully operational) that should be considered by users of the ASME's guidance document. The proposed innovative technology

paper may include diagrams, photos, drawings, catalog information, or any and all information required to support the qualification of the innovative technology, system or process for the stated objectives of water conservation, reuse and recovery in industrial and power plants.

The Committee does not intend to publish or evaluate these technology submittals in this guidance document. This Subcommittee currently plans to list the names of qualified contributors in an attachment as acknowledgement of their important contribution to the development of this document. By submitting your brief, each contributor is provided the unique opportunity to ensure their innovative technology is acknowledged in this guidance document and not overlooked for inclusion in subsequent related ASME Standards.

Please submit your narrative, along with contact information, by September 25, 2014 to: Fredric J. Constantino, Project Engineer, ASME, 212.591.8684, [constantinof@asme.org](mailto:constantinof@asme.org)"

Arnold Feldman

### **C. THE EPA'S PHONY 'ENVIRONMENTAL JUSTICE' CAPER**

The agency's real agenda: empire, control, and inverted justice for poor and minority families. Guest essay by Paul Driessen When it comes to energy, climate change, justice and transparency, the Obama Administration and its Environmental Protection Agency want it every possible way. Their only consistency is their double standards and their determination to slash hydrocarbon...

<http://wattsupwiththat.com/2014/09/08/the-epas-phony-environmental-justice-caper/>

### **D. INDUSTRY GROUPS LAWSUITS CHALLENGING COOLING WATER INTAKE RULE FILED IN 5TH AND 7TH CIRCUITS**

On September 5, 2014, the American Petroleum Institute (API) filed a petition for review of the Existing Facility Cooling Water Intake Rule in the Seventh Circuit Court of Appeals and on September 8th, the Utility Water Act Group (UWAG) and Entergy filed suit in the Fifth Circuit Court of Appeals (where appeals to Texas based challenges are typically heard). While the petitions are the bare bones filings, API's prior comments focused on the cost of compliance and UWAG has recently focused on circularity in the rule because EPA requires new units to demonstrate the effectiveness of impingement reduction technologies in their applications for CWA permits – *i.e.* prior to operating the technology – among other details. Concerns about the Fish and Wildlife Service role under the rule have also been expressed publically by various industry representatives.

These new challenges by industry groups follow closely on the heels of suits by environmental groups filed in the First, Second, and Ninth Circuit Courts of Appeals (*see* TIP 2014-150). As previously noted, the challenges will eventually be consolidated into one lawsuit. It is not yet known which court will ultimately hear the consolidated challenge.

Roger Zygmunt

### **E. EPA PROPOSAL ON AFFIRMATIVE DEFENSES FOR SSM ACTIVITIES**

On September 5, 2014, EPA issued a supplemental notice of proposed rulemaking to revise EPA policy and issue a call for state implementation plan revisions ("SIP call") to eliminate affirmative defenses for startup, shutdown, and malfunction ("SSM") activities. In part, EPA is

proposing a SIP call to remove the affirmative defenses for upsets and unplanned maintenance, startup, and shutdown activities from the Texas SIP. If the proposal is finalized, Texas and the other affected states will have 18 months to submit SIP revisions to eliminate the affirmative defenses at issue.

The proposal is described as a supplemental notice of proposed rulemaking because it supplements EPA's February 2013 proposed SIP call for 36 states relating to SSM rules (described in TIP 2013-35 and TIP 2013-39). In the 2013 proposal, EPA proposed to issue SIP calls for states that had affirmative defenses for excess emissions during startup and shutdown activities, on the basis that those activities should be addressed through the permitting process. However, EPA at the time proposed to retain affirmative defenses for malfunctions, and thus made no SIP call with respect to Texas.

Since the February 2013 proposal, a federal court ruled in the context of the Portland Cement MACT regulations that EPA could not establish affirmative defenses to penalties established by statute. *Natural Resources Defense Council v. EPA*, 749 F.3d 1055 (D.C. Cir. 2014). EPA is now proposing to subject to the SIP call the SIP-approved TCEQ rule establishing an affirmative defense for unplanned startups, shutdowns, and maintenance activities. EPA's posture has thus changed since the Fifth Circuit Court of Appeals upheld EPA's approval of the TCEQ rule despite concerns similar to those articulated in the September 5 proposal (see TIP 2012-115). The comment deadline is November 6, 2014. A copy of EPA's proposal and fact sheet are attached.

Roger Zygmunt

## **F. ASME WEBINAR: POWER PLANT EFFICIENCY – SAVING FUEL**

In a step intended to reduce carbon dioxide emissions, the U.S. Environmental Protection Agency has proposed improving the fuel efficiency (heat rate) of coal-fired power plants by 6 percent. The EPA is still taking comments on this proposed rule, so it's important to understand whether this plant efficiency objective is an impossible standard or maybe too easy a goal. To learn more about this issue as well as its potential impact, join industry experts in power plant design and operations for a live 90-minute webinar as part of the ongoing ASME Energy Forum series.

This webinar is focused solely on technology solutions to power plant efficiency improvement. Accordingly, this webinar will not be discussing regulatory policy.

Arnold Feldman

[file:///C:/Users/test/AppData/Local/Microsoft/Windows/Temporary%20Internet%20Files/Content.Outlook/CLWKZR2U/140909\\_EnergyForum-PowerPlantEff.html](file:///C:/Users/test/AppData/Local/Microsoft/Windows/Temporary%20Internet%20Files/Content.Outlook/CLWKZR2U/140909_EnergyForum-PowerPlantEff.html)

## **COMMENTS:**

### **A. THE WEEK THAT WAS: 2014-09-06 (SEPT. 6 2014)**

By Ken Haapala, Executive Vice President, Science and Environmental Policy Project (SEPP)

**SEPP Handout:** SEPP has modified its double-sided, one-page handout on Climate Fears and Finance to include a brief comparison between Federal government expenditures on alternative energy and NIH expenditures on health.

*The Lobby*

*In August 2013, the White House reported in FY 2013, US expenditures on Clean Energy Technologies were \$5.783 billion, Energy Tax Provisions That May Reduce Greenhouse Gases were \$4.999 billion, and Energy Payments in Lieu of Tax Provisions were \$8.080 billion for a total \$18.862 billion. Such expenditures created a sustained green lobby for climate change.*

*For FY 2013, the National Institutes of Health (NIH) reported its expenditures on cancer research were \$5.274 billion and expenditures on all categories of clinical research were \$10.604 billion. Government expenditures on alternative energy sources and research were 78% greater than NIH expenditures on all categories of clinical research on known threats to human health. The fear of climate change has distorted spending priorities in the Federal government. See: [http://www.sepp.org/key\\_issues/ClimateFearsandFinance9-3.pdf](http://www.sepp.org/key_issues/ClimateFearsandFinance9-3.pdf)*

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**Photo synthesis:** On September 4, the Minority Staff of the US Senate Environment and Public Works Committee released a remarkable document for Washington on global warming/climate change. *Critical Thinking on Climate Change: Empirical Evidence to Consider Before Taking Regulatory Action and Implementing Economic Policies* contains a section discussing photosynthesis and the benefits of enhanced atmospheric carbon dioxide (CO<sub>2</sub>)

*Photosynthesis is the process whereby plants using light energy from the sun convert carbon dioxide and water to glucose sugar and oxygen gas through a series of reactions. The general equation for photosynthesis is:*

*carbon dioxide + water =[+ sic]light energy => glucose + oxygen  
6CO<sub>2</sub> + 6H<sub>2</sub>O =[+ sic] light energy=> C<sub>6</sub>H<sub>12</sub>O<sub>6</sub> + 6O<sub>2</sub>*

*Humans exhale CO<sub>2</sub> at a rate of approximately 40,000 parts per million (ppm). Humans inhale CO<sub>2</sub> at the rate it currently exists in the atmosphere, which is just below 400 ppm. Accordingly, humans exhale CO<sub>2</sub> at a much higher rate than they inhale. Not a single former [EPA] Administrator [who testified before the committee] could answer a question on these rates.*

*As all four EPA Administrators made clear, EPA's decision to regulate CO<sub>2</sub> is the first time the agency has ever regulated a gas that is necessary to and makes life on earth possible. As well, it is also the only gas the federal government has ever tried to regulate that human's exhale at a greater rate than they inhale. Given both these facts, the claim that CO<sub>2</sub> is a "pollutant" deserves further scrutiny.*

*Finally, all four former EPA Administrators were unable to name even a single product that could be made out of wind and sunlight. Everything in modern society, from computers, laptops, solar panels, iPads and flat screen televisions, to advanced medical equipment and all our nation's critical infrastructure is built out of fossil resources and their derivative products. Perhaps the above equation will remind the members of the Department of Agriculture who have forgotten the concept of photosynthesis and are busily calculating the bureaucratically contrived Social Cost of Carbon. The process creates the food and the oxygen animals need to live.*

**Other updates in the report include:**

*Wildfires and forestry management have garnered additional public attention of late, and so were split into its own section with additional information.*

- *A new section has been added on the impacts European countries have seen as a result of their climate regulations.*
- *A new section has been added on Polar Bear populations and claims of mass extinctions.*
- *Nearly all sections have been updated with new information.*
- *An addendum was added to provide examples of how the Obama Administration's National Climate Assessment report ignores critical scientific evidence when submitted by top researchers and scientists*

The report presents numerous critical questions on topics such as climate models, benefits of CO<sub>2</sub>, sea level rise, extreme weather events, polar bears and the purpose of climate regulations. The report contains a chapter titled ‘The Science is Settled: The Government Can’t Control Climate.’”

There is now a different mode of thinking by some in Washington that directly contrasts that popular mindset that carbon dioxide is the control knob of earth’s temperatures and is causing unprecedented and dangerous global warming. See link under Challenging the Orthodoxy.

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Sea Ice and Polar Vortex: *Nature Communications* published a study linking recent severe cold winters with a weakened polar vortex caused by loss of Arctic sea-ice. The paper has eleven data points in the satellite record between 1979 and 2012. At best it can be called a hasty generalization. Coincidentally, this week the National Snow and Ice Data Center announced that it has recovered earlier photos from the Nimbus satellites that show large gaps in the winter Arctic sea ice during the 1960s, a period considered colder than today. The photos weaken the claim of a link between Arctic sea ice and recent severe winters. However, there is a more important point. That is, the general ignorance of climate history demonstrated by the Climate Establishment. In his book, *Climate, History and the Modern World*, H.H. Lamb asserts that the deadliest winter storms ever to hit northern Europe during its recorded history occurred during the Little Ice Age.

The Climate Establishment has tried to dismiss the Little Ice Age as a European phenomenon. However, one of Lamb’s students, Tim Ball, uncovered the enormously rich climate and weather records of the Hudson Bay Company. The records cover the Hudson area as far south as the Dakotas and west to southwestern Alberta. The area includes plains, forests and tundra. In Climatology chapter of the *Eighteenth-Century Naturalists of Hudson Bay*, which Ball co-authored, Ball presents evidence dating to the early 1700s that the climate of area varied and the Little Ice Age was marked by periods of extremely cold winters. The recorded evidence is largely ignored by the Climate Establishment, including Environment Canada, a government agency.

These records show that the Little Ice Age was, at least, a Northern Hemisphere phenomenon, not strictly a European one. Other records show that Arctic sea ice advanced during the Little Ice age, probably cutting the Nordic settlers of Greenland off from the sea, which led to their demise. Much of Iceland was surrounded by ice, and it was dire period for the people.

This history tends to contradict the link between melting Arctic sea ice and extremely cold winters. Also, it calls into question the policies of journals that publish studies that demonstrate a lack of knowledge of the history of climate change. See links under Changing Cryosphere –Land / Sea Ice.

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**Is the Party Over? The UN Climate Summit in New York City on September 23 appears to be a dud. The leaders of both China and India have sent their regrets. The countries are the number 1 and number 3 world emitters of CO<sub>2</sub>, accounting to about one-third of global emissions. One can speculate that perhaps the leaders realize that CO<sub>2</sub> is vital plant food. Indian Prime Minister Narendra Modi has very bluntly criticized the science produced by the UN Intergovernmental Panel on Climate Change (IPCC). Whether they intend to or not, not participating in the Summit and subsequent agreements to restrict CO<sub>2</sub> and energy use could be a tremendous relief for most of the people in the world. See links under Problems in the Orthodoxy.**

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**Water Shortages: Modern hydraulic fracturing of shale for oil and natural gas uses large volumes of water for each well. A new report claims that extracting oil and gas in arid areas can be severely limited by water shortages. However, hydraulic fracturing is booming in arid and semi-arid areas of the West, such as west Texas and New Mexico. There are major issues the report fails to emphasize. One is recycling, which is being performed. The second is the tremendous water resources, previously unknown, the processes are unveiling. Indeed, too much water is a burden in some areas. See: Oil and Natural Gas –the Future or the Past?**

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**Trivial Pursuit: John Brignell has another post on the foolishness of the EU (and the US Department of Energy) spending great amounts of money trying to improve the electric efficiency of electric appliances. (As discussed in the August 30 TWTW, the Department of Energy got \$16.8 billion in the so-called “stimulus bill.”). Specifically, Brignell addresses hair dryers and the physical properties of water.**

**Electrical appliances were often called labor saving devices. Sacrificing the labor saving features of the appliance for energy efficiency reduces the effectiveness of the appliance. The DOE and EPA ignore this trade-off in claiming financial saving for the consumer for appliances that cost more. See link under Challenging the Orthodoxy.**

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**More Trivial Pursuit: Anthony Watts discusses an article comparing the carbon footprint of game downloaded via disks purchased in stores as compared with downloaded via the internet.**

**He brings up a past post on the carbon footprint of the new NCAR supercomputing center in Wyoming, which produces most of its electricity from coal. It would be amusing to see a calculation of the carbon footprints of the world’s climate models. Could we fight climate change by shutting down the climate models? See links under Below the Bottom Line**

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**Additions and Corrections: SEPP Board Member Tom Sheahan, a MIT physicist who retired from the National Renewable Energy Laboratories, pointed out that the concept of on the Energy Return On Invested (EROI) discussed in the August 30 TWTW is an important issue. Unlike the concept called Levelized Cost of Electricity used by the Energy Information Agency (EIA), EROI takes into account costs of energy storage for an unreliable form of electricity generation, particularly for modern society. Until less expensive and less energy intensive forms of storage can replace pumped storage, PV Solar and Wind are not practical for a modern society. To its credit, EIA does separate**

dispatchable (reliable) technologies from non-dispatchable technologies. See:  
<http://theenergycollective.com/barrybrook/471651/catch-22-energy-storageand>  
[http://www.eia.gov/forecasts/aeo/electricity\\_generation.cfm](http://www.eia.gov/forecasts/aeo/electricity_generation.cfm)

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Number of the Week: \$540 a barrel. In his discussion of the problems with the Climate Summit and Europe's energy example Andrew McKillop calculates that ordinary electricity users in Germany are "paying around 25 euro cents a kilowatt hour –in oil terms the equivalent of about \$540 a barrel."

<http://www.sepp.org/twtwfiles/2014/TWTW%209-6-14.pdf>

## **B. MATT RIDLEY IN THE WSJ: WHATEVER HAPPENED TO GLOBAL WARMING?**

[Anthony Watts](#) / [1 day ago](#)

*Now come climate scientists' implausible explanations for why the 'hiatus' has passed the 15-year mark.* By MATT RIDLEY

THE WALL STREET JOURNAL.

WSJ

Sept. 4, 2014 7:20 p.m. ET THE WALL STREET

JOURNAL

On Sept. 23 the United Nations will host a party for world leaders in New York to pledge urgent action against climate change. Yet leaders from China, India and Germany have already announced that they won't attend the summit and others are likely to follow, leaving President Obama looking a bit lonely. Could it be that they no longer regard it as an urgent threat that some time later in this century the air may get a bit warmer?

In effect, this is all that's left of the global-warming emergency the U.N. declared in its first report on the subject in 1990. The U.N. no longer claims that there will be dangerous or rapid climate change in the next two decades. Last September, between the second and final draft of its fifth assessment report, the U.N.'s Intergovernmental Panel on Climate Change quietly [downgraded](#) the warming it expected in the 30 years following 1995, to about 0.5 degrees Celsius from 0.7 (or, in Fahrenheit, to about 0.9 degrees, from 1.3).

Even that is likely to be too high. The climate-research establishment has finally admitted openly what skeptic scientists have been saying for nearly a decade: Global warming has stopped since shortly before this century began.

First the climate-research establishment denied that a pause existed, noting that if there was a pause, it would invalidate their theories. Now they say there is a pause (or "hiatus"), but that it doesn't after all invalidate their theories.

Alas, their explanations have made their predicament worse by implying that man-made climate change is so slow and tentative that it can be easily overwhelmed by natural variation in temperature—a possibility that they had previously all but ruled out.

When the climate scientist and geologist Bob Carter of James Cook University in Australia wrote an [article](#) in 2006 saying that there had been no global warming since 1998 according to the most widely used measure of average global air temperatures, there was an outcry. A year later, when David Whitehouse of the Global Warming Policy Foundation in London made the same [point](#), the environmentalist and journalist Mark Lynas [said](#) in the New Statesman that Mr. Whitehouse was “wrong, completely wrong,” and was “deliberately, or otherwise, misleading the public.” We know now that it was Mr. Lynas who was wrong. Two years before Mr. Whitehouse’s article, climate scientists were already admitting in [emails](#) among themselves that there had been no warming since the late 1990s. “The scientific community would come down on me in no uncertain terms if I said the world had cooled from 1998,” wrote Phil Jones of the University of East Anglia in Britain in 2005. He went on: “Okay it has but it is only seven years of data and it isn’t statistically significant.”

If the pause lasted 15 years, they conceded, then it would be so significant that it would invalidate the climate-change models upon which policy was being built. A [report](#) from the National Oceanic and Atmospheric Administration (NOAA) written in 2008 made this clear: “The simulations rule out (at the 95% level) zero trends for intervals of 15 yr or more.” Well, the pause has now lasted for 16, 19 or 26 years—depending on whether you choose the surface temperature record or one of two satellite records of the lower atmosphere. That’s according to a new statistical [calculation](#) by Ross McKittrick, a professor of economics at the University of Guelph in Canada.

It has been roughly two decades since there was a trend in temperature significantly different from zero. The burst of warming that preceded the millennium lasted about 20 years and was preceded by 30 years of slight cooling after 1940.

This has taken me by surprise. I was among those who thought the pause was a blip. As a “lukewarmer,” I’ve long thought that man-made carbon-dioxide emissions will raise global temperatures, but that this effect will not be amplified much by feedbacks from extra water vapor and clouds, so the world will probably be only a bit more than one degree Celsius warmer in 2100 than today. By contrast, the assumption built into the average climate model is that water-vapor feedback will treble the effect of carbon dioxide.

But now I worry that I am exaggerating, rather than underplaying, the likely warming.

Full story [here](#).

Don Shaw

### **C. PITTSBURGH TRIBUNE EDITORIAL CALLS THE IPCC ‘CLIMATE-CLUCKING CHICKEN LITTLES’**

[Anthony Watts / 10 hours ago September 5, 2014](#)

Slowly, sanity is returning as witnessed by this pragmatic editorial on Sept 2nd:



The world's loudest climate-clucking Chicken Littles foresee grain harvests diminishing, Greenland's ice sheet melting, sea levels rising and extreme weather increasing. And there's less time than ever to head off disaster by submitting to IPCC orthodoxy.

But even the loudest clucking can't drown out contrary facts. U.S. temperatures haven't risen in a decade. Global temperatures have been flat for 17 years. Prior warming was within natural variability. The IPCC's main greenhouse gas, carbon dioxide, isn't a pollutant. And humanity's climate impact is negligible, so top-down "solutions" are pointless and economically harmful, as shown by Australia repealing its carbon tax in favor of voluntary clean-energy incentives.

Read more: <http://triblive.com/opinion/editorials/6687117-74/climate-ipcc-clucking#ixzz3CVUkgOb7>

#### **D. OOPS! OBAMA ADMINISTRATION DIETARY RECOMMENDATIONS MAY BE TIED TO INCREASED GREENHOUSE GAS EMISSIONS**

From the University of Michigan, everything you eat is bad for GHG's apparently, so only eat what the government says. Oh, wait. ANN ARBOR—If Americans altered their menus to conform to federal dietary recommendations, emissions of heat-trapping greenhouse gases tied to agricultural production could increase significantly, according to a new study by University of Michigan...

<http://wattsupwiththat.com/2014/09/05/oops-obama-administration-dietary-recommendations-may-be-tied-to-increased-greenhouse-gas-emissions/>

#### **E. GOOD NEWS FROM A NEW REPORT: EFFECTIVE CLIMATE AGREEMENT NOT LIKELY**

From the Research Council of Norway According to a group of Norwegian researchers, the prospects for achieving an effective international climate treaty are poor. The measures that are

politically feasible are ineffective and the measures that would be effective are politically infeasible. In the project “The nature, design and feasibility of robust climate agreements,” researchers...

<http://wattsupwiththat.com/2014/09/05/good-news-from-a-new-report-effective-climate-agreement-not-likely/>

## **F. GLOBAL TEMPERATURE UPDATE – NO GLOBAL WARMING FOR 17 YEARS 11 MONTHS**

*... or 19 years, according to a key statistical paper. By Christopher Monckton of Brenchley | The Great Pause has now persisted for 17 years 11 months. Indeed, to three decimal places on a per-decade basis, there has been no global warming for 18 full years. Professor Ross McKittrick, however, has upped the ante with...*

<http://wattsupwiththat.com/2014/09/04/global-temperature-update-no-global-warming-for-17-years-11-months/>

## **G. PAST TEMPERATURE IN GREENLAND ADJUSTED TO FIT NEW THEORY**

From the University of Copenhagen – Niels Bohr Institute (BTW, the phrase “Past temperature in Greenland adjusted” in the headline is their choice of words, not mine.) One of the common perceptions about the climate is that the amount of carbon dioxide in the atmosphere, solar radiation and temperature follow each other – the more...

<http://wattsupwiththat.com/2014/09/04/past-temperature-in-greenland-adjusted-to-fit-new-theory/>

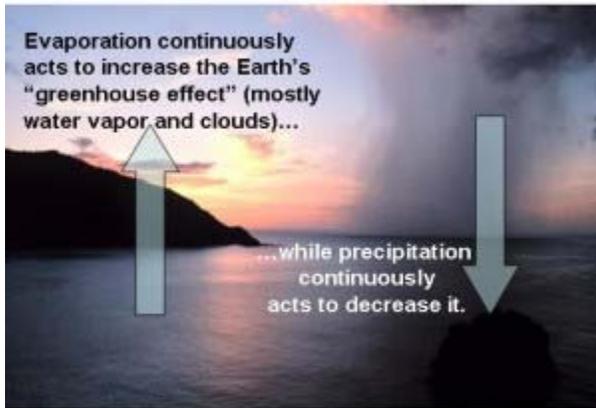
## **H. ANALYSIS: SOLAR & WIND POWER COSTS ARE HUGE COMPARED TO NATURAL GAS FIRED GENERATION**

Ed Hoskins has done an analysis of cost ratios, and no matter what your viewpoint of economics might be, the numbers here don't lie. Without being propped up by subsidies, solar and wind aren't even in the race as their competitiveness leaves them at the starting line while cheap natural gas (aided by fracking) runs...

<http://wattsupwiththat.com/2014/09/06/analysis-solar-wind-power-costs-are-huge-compared-to-natural-gas-fired-generation/>

## **I. WATER VAPOR FEEDBACK AND THE GLOBAL WARMING PAUSE**

September 10th, 2014



Global warming is the predicted result of increasing atmospheric CO2 causing a very small (~1-2%) decrease in the rate at which the Earth cools to outer space through infrared radiation. And since temperature change of anything is always the result of net gains and losses of energy, a decrease in energy lost leads to warming.

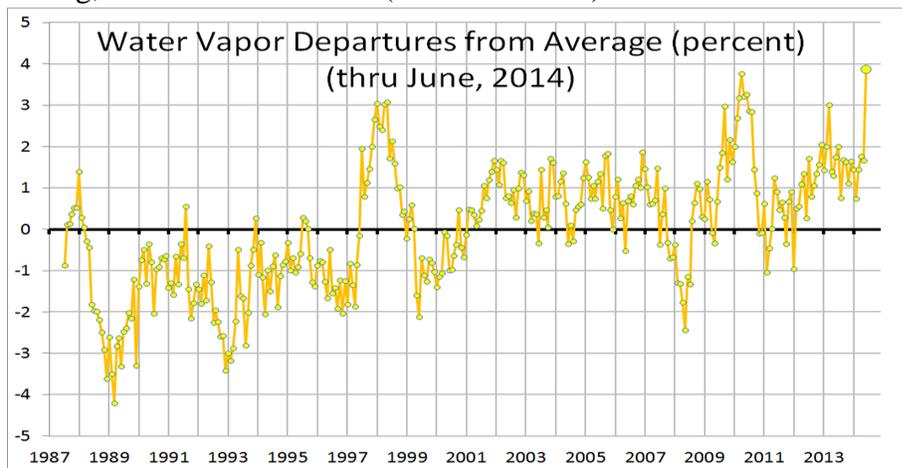
The direct effect of that warming is only about 1 deg. C in the next 100 years, though (theoretically calculated, in response to an eventual doubling of CO2 late in this century). Climate models instead project 2 to 3 times as much warming as that, due to "positive feedbacks" in the climate system.

But the Earth hasn't warmed as much as expected by the global warming pundits and their positive feedbacks, especially in the tropics where deep moist convection dominates the atmosphere's response to forcing.

Why?

We know that water vapor is the main atmospheric gas which reduces the Earth's ability to radiatively cool in the infrared (IR). And, unlike CO2, water vapor varies tremendously due to a variety of processes.

Increasing surface temperatures cause more evaporation which by itself increases the water vapor content of the atmosphere. Water vapor at low altitudes has indeed increased with warming, as I have shown here (over the oceans):



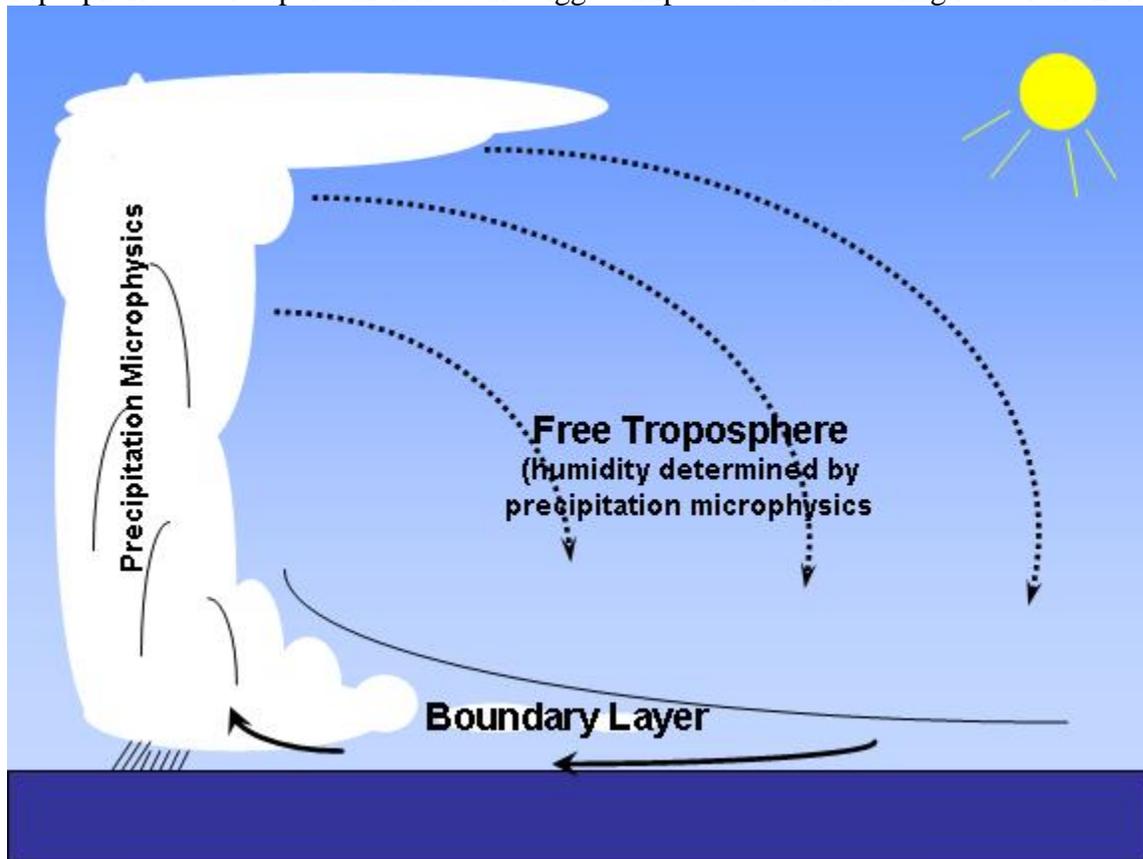
So, the simple-minded assumption has been that warming caused by increasing CO2 would cause more water vapor, which will enhance the radiative warming. That's called positive water

vapor feedback, which roughly doubles the amount of warming from the CO2 increase alone in climate models.

[Yes, I know that more water vapor evaporated from the surface cools the surface...that's taken into account by the climate models, too.]

But for many years I have advocated the view that water vapor feedback on the long time scales of climate change might not be positive. Clearly, something is causing the current “pause” in global warming. The three most likely causes of the pause (in my view, not prioritized) are: (1) increasing cloud reflection reducing the solar input, or (2) decreasing water vapor (and maybe cirrus clouds) in the upper troposphere increasing the infrared output, or (3) an increase in ocean mixing sequestering extra heat in the deep ocean. Or, some combination of the three. (I'm not a big fan of other theories, like more aerosol reflection of sunlight from dirty Chinese coal, or problems with the CO2 theory itself. Not that they are necessarily wrong.)

Our 1997 BAMS paper ([Spencer & Braswell, 1997](#)) discussed the importance of middle and upper tropospheric vapor to the IR cooling rate of the Earth. I also blogged about water vapor feedback [four years ago](#). Basically, the bottom line is that it's the processes controlling *upper* tropospheric water vapor which have the biggest impact on the IR cooling rate of the Earth.



As Spencer & Braswell (1997) showed, at low relative humidities often seen in the upper troposphere (below, say, 30%) a tiny change in water vapor content has a huge effect of the infrared cooling rate of the Earth. **So you can have large increases in lower tropospheric vapor, but a small decrease in upper tropospheric vapor can completely negate the resulting water vapor feedback.**

A [recent paper](#) which claims to have new satellite evidence of positive water vapor feedback uses highly uncertain infrared water vapor channel data (6.7 microns) which has unknown long-

term instrument stability, and unknown diurnal drift effects (issues which we have spent 20 years on with the microwave temperature sounders), and unknown cloud contamination effects.

The important thing to understand is this: *the largest control of water vapor feedback is the efficiency of precipitation systems, which controls how much water vapor is detrained into the upper troposphere.* This process is what controls the humidity of the atmosphere on a clear day...that clear air is being forced to sink by rising air in precipitation systems, and its humidity (and thus its influence on the IR cooling rate of the clear air to space) can also be traced back to microphysical processes in precipitation systems. Clear air might seem boring, but it has a huge influence on the Earth's temperature, through its humidity controlling the rate at which the Earth cools to space.

While climate models can be *tuned* to produce the average amount of water vapor in the upper troposphere reasonably realistically, *we do not understand how precipitation efficiency changes with warming, and so the physics cannot currently be included in climate models for the purpose of predicting climate change.*

On the subject of this uncertainty, a 20-year old paper by [Renno, Emanuel, and Stone \(1994\)](#) concluded:

***“The cumulus convection schemes currently in use in GCMs (general circulation models) bypass the microphysical processes by making arbitrary moistening assumptions. We suggest that they are inadequate for climate change studies.”***

That paper described from a theoretical point of view how high precipitation efficiency causes a cool and dry climate, while low precipitation efficiency causes a warm and moist climate.

While I'm sure that convective parameterizations are better today than they were 20 years ago, they really can't address something this complex. Even much more sophisticated cloud resolving models (CRMs) still make rather arbitrary assumptions regarding the conversion of cloud to precipitation. And that which isn't converted to precipitation re-evaporates and then changes the humidity of clear air.

It might well be that the limited radiosonde evidence we have of lower tropospheric moistening and upper tropospheric drying (e.g. [Paltridge et al., 2009](#)) is telling us that water vapor feedback is not positive, as is currently assumed in climate models. This is basically the reason why [Miskolczi \(2010\)](#) found a constant greenhouse effect...that the observed decrease in upper tropospheric humidity (which is controversial from an observational standpoint) just offset the warming caused by increasing CO<sub>2</sub>.

None of the above regarding water vapor feedback is new, and even our 1997 paper examined issues Dick Lindzen was advocating at least a decade before us. I'm presenting it again to remind ourselves of how little we really know about climate *change*.

And don't even get me started on cloud feedback.

Roy Spencer

## **J. PHOENIX FLOODING – NOT DUE TO ‘CLIMATE CHANGE’, EXTREME RAINFALL EVENTS ARE NOT ON THE INCREASE**

Ah the alarmists are out in full force today over a rainstorm. The Sky Harbor Airport in Phoenix reported 2.96 inches of rain before 8:30 a.m. local time, beating the old record of 2.91 inches on Sept. 4, 1939. Parts of Interstate 10 were flooded, with the morning rush hour just beginning. Schools closed for...

<http://wattsupwiththat.com/2014/09/08/phoenix-flooding-not-due-to-climate-change-extreme-rainfall-events-are-not-on-the-increase/>

## **K. NEW PAPER: FRAUD, BIAS & PUBLIC RELATIONS – THE 97% ‘CONSENSUS’ AND ITS CRITICS**

[Anthony Watts / 23 hours ago September 8, 2014](#)

**Claims of 97% consensus on global warming depend on research described as fraudulent and biased**

**London, 8 September:** A new briefing note published today by the Global Warming Policy Foundation examines claims made by a great many commentators across the world, including President Obama and Ed Davey, of an overwhelming consensus on climate change. These depend on research that has been subject to public and entirely unrebutted allegations that it is fraudulent.

Although the authors of the research claim to have shown that most climate change papers accept that mankind is responsible for the majority of recent warming, in fact the underlying study shows no such thing.

One senior climatologist described the paper as ‘poorly conceived, poorly designed and poorly executed’. Another researcher called it ‘completely invalid and untrustworthy’, adding that there was evidence of scientific fraud.

Andrew Montford, the author of the paper, said: “It has now been shown beyond doubt that the claims of a 97% consensus on climate change are at best misleading, perhaps grossly so, and possibly deliberately so. It’s high time policymakers stopped citing this appalling study.”

**Full paper (pdf) – [Fraud, Bias And Public Relations: The 97% ‘Consensus’ And Its Critics](#)**

## **L. HIGH INCREASES FOR ATMOSPHERIC CO2 IN 2013 – BUT THERE’S STILL NO WARMING**

While CO2 has increased to “record” levels, the pause in global temperature continues. Via AP: Figures released Tuesday by a United Nations advisory body reveal that 2013 saw new recorded highs for both carbon dioxide and methane, as well as the largest year-over-year rise in carbon dioxide since 1984, reflecting continuing worldwide emissions from human...

<http://wattsupwiththat.com/2014/09/09/study-shows-record-high-increases-for-atmospheric-co2-in-2013-but-theres-still-no-warming/>

**The increased atmospheric CO2 concentration without atmospheric temperature increase conclusively proves global warming is not caused by CO2 atmospheric concentration. GHH**

## **M. U.N. SAYS CARBON DIOXIDE POLLUTION HIT RECORD**

**By John Heilprin ASSOCIATED PRESS**

GENEVA — Carbon dioxide levels in the atmosphere reached a record high in 2013 as increasing levels of man-made pollution transform the planet, the U.N. weather agency said Tuesday.

The heat-trapping gas blamed for the largest share of global warming rose to global concentrations of 396 parts per million last year, the biggest change in three decades, the World Meteorological Organization said in an annual report.

That’s an increase of 2.9 ppm from the previous year and is 42 percent higher than before the Industrial Age, when levels were about 280 parts per million.

Based on the current rate, the world’s carbon dioxide pollution level is expected to cross the 400 ppm threshold by 2016, said WMO Secretary-General Michel Jarraud. That is way beyond

the 350 ppm that some scientists and environmental groups promote as a safe level and which was last seen in 1987.

Developing economies

CO2 emissions are growing mainly in China and other large developing countries as their economies expand. So far developed and developing countries have failed to reach a binding pact that would curb emissions globally. The goal of U.N. climate talks is to deliver such an agreement next year.

Concentrations of CO2 build up over time because it stays in the atmosphere for decades. So even if emissions stopped today, it would take many years before concentrations dropped significantly.

Top climate scientists are now becoming increasingly skeptical that countries across the globe will meet the voluntary goals they set at the 2009 Copenhagen climate summit of limiting global warming to about 3.6 degrees Fahrenheit above preindustrial levels.

‘Time is not on our side’

In a draft report last month, the United Nations’ Intergovernmental Panel on Climate Change said it is looking more likely that the world will shoot past that point and by mid-century temperatures will increase by about another 3.6 degrees Fahrenheit compared to temperatures from 1986 to 2005. And by the end of the century that scenario will bring temperatures about 6.7 degrees warmer, it said.

“We know without any doubt that our climate is changing and our weather is becoming more extreme due to human activities such as the burning of fossil fuels,” Jarraud said. “Time is not on our side, for sure.”

To address the challenge, U.N. Secretary-General Ban Ki-moon has invited heads of state and other leaders to a Sept. 23 climate change summit in New York on the sidelines of the annual U.N. General Assembly.

The WMO report Tuesday said the rate of ocean acidification, which comes from added carbon absorbed by oceans, “appears unprecedented at least over the last 300 million years.”

Between 1990 and 2013, carbon dioxide and other gas emissions caused a 34 percent increase in the warming effect on the climate, the report said.

The warming effect, or “radiative forcing,” measures the net difference between the sunlight that the Earth absorbs and the energy it radiates back into space. More absorption leads to higher temperatures.

**Note the article is devoid of any comparison of CO2 concentrations and current physically measured atmospheric temperature. Also, the article does not say the current temperature has risen due to increased CO2. See Item M above. GHH**  
Houston Chronicle 10 Sept 2014, page A4.

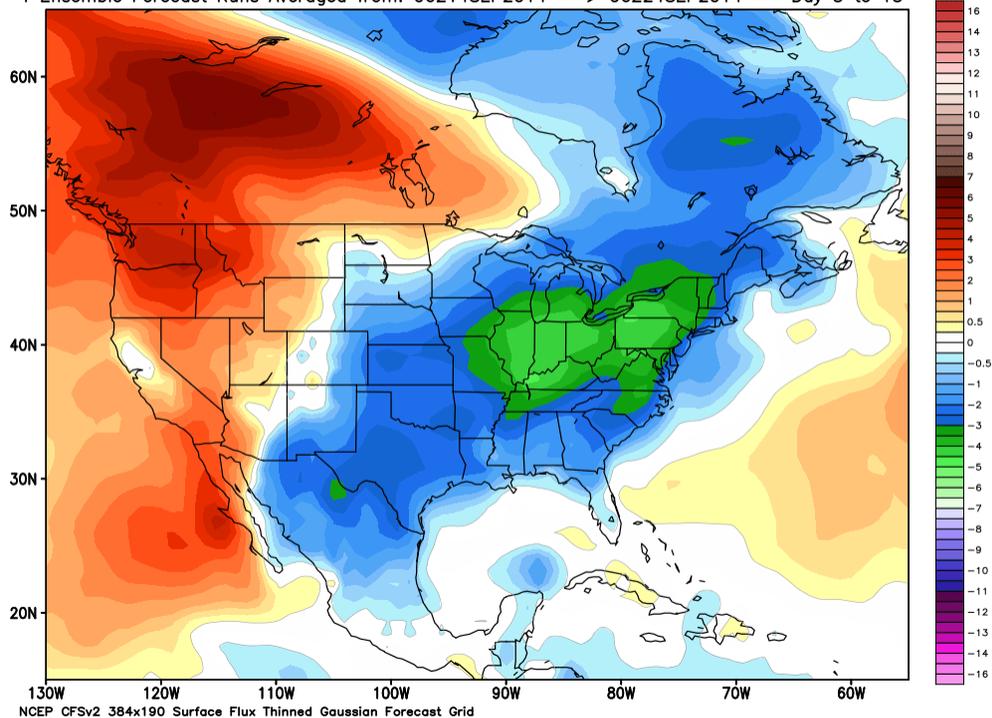
## **N. SEPT. 21, NYC: THE PEOPLE’S FROZEN CLIMATE MARCH?**

September 9th, 2014

It seems more than appropriate that the [Gore Effect](#) might be in full swing in NYC on Sept. 21 when climate hand-wringers from around the country gather to protest the world being maybe a full degree warmer than it was 100 years ago.

The latest Climate Forecast System forecast for the 10-day period around that [blessed event](#) (12 days from now) shows the eastern U.S. pretty dang chilly, with temperatures averaging 8-10 deg. below normal (Plot courtesy of [WeatherBell.com](#)):

NCEP CFS 2-meter TEMPERATURE [°C] Mean Forecast Departure Init: 06Z09SEP2014  
4 Ensemble Forecast Runs Averaged from: 06Z14SEP2014 --> 06Z24SEP2014 --- Day 5 to 15



Of course, now that cold weather is also the fault of global warming the participants can complain about that, too.

Roy Spencer

<http://www.drroyspencer.com/>

## **O. MICHAEL MANN CAUGHT TELLING A ‘PORKY’ TO THE COURT (AGAIN) IN LEGAL FILINGS**

After being caught out claiming he was a “Nobel Prize recipient” in his original complaint (then having to retract it), it seems Mann and his lawyers just don’t have the good sense to know when to stop. In this case Mann has been “hoisted by his own petard”. His very own words condemn him. Again...

<http://wattsupwiththat.com/2014/09/11/michael-mann-caught-telling-a-porky-to-the-court-again-in-legal-filings/>

## **P. A GUIDE FOR THOSE PERPLEXED ABOUT GLOBAL WARMING**

Guest Post by Ira Glickstein How should responsible Global Warming Skeptics respond to opinions from intelligent members of the general public who have been perplexed by the Warmists and Alarmists? We should reply in a strictly fact-based way, using official sources — being careful not to speculate or over-complicate the matter. Here is my shot...

<http://wattsupwiththat.com/2014/09/10/a-guide-for-those-perplexed-about-global-warming/>

## **Q. BRUSSELS ANTI-GREEN PURGE – NEW EU LEADERS NEUTER GREEN LOBBY**

[Anthony Watts / 2 hours ago September 12, 2014](#)

From Benny Peiser and The GWPF – [Conservative MEP] Miguel Arias Canete, Spain’s former agriculture and environment minister, was nominated as the European Union’s next commissioner for climate and energy, becoming the first single supervisor of those two policy areas. The new commission will take office as energy policy is moving up the EU agenda amid a crisis in Ukraine, the transit country for around half of Russian natural gas to Europe, and the unrest in Middle East. –Ewa Krukowska, [Bloomberg 10 September 2014](#)

Jean-Claude Juncker’s decision to group EU commissioners into teams serving under a vice-president has been welcomed by some interest groups, and derided by others. Rumours of the intention to combine the climate and energy portfolios have been sparking alarm among environmentalists for weeks. But the elimination of a dedicated environment portfolio came as a genuine shock to green groups. The ‘Green 10’ – an alliance of European environmental NGOs – sent a letter to Juncker saying that his restructuring decisions suggest a “de-facto shutdown of EU environmental policymaking”. –Dave Keating, [European Voice, 11 September 2014](#)

The Green10, the alliance of leading environmental NGOs at EU level, supported by over 20 million EU citizens and active in all 28 Member States, wrote today an open letter to President Jean-Claude Juncker to express grave concerns over the direction the EU seems to be taking with the announcement of his new team. The coalition highlights that the structure of the new Commission, the mission letters, and the choice of Commissioners all reveal a serious downgrading of environment and a roll back of EU commitments to sustainable development, resource efficiency, air quality, biodiversity protection and climate action. –[WWF Europe, 11 September 2014](#)

“The biggest change is the structural blocks put on any new legislative activity,” said Tony Long, director of campaign group WWF. “Every avenue is blocked because it all has to go through a vice-president and then a first vice-president.” Mark Fodor, executive director of campaign group Central and Eastern Europe Bankwatch, said the letter suggests that Juncker is back-tracking from previous commitments. “By missing out the crucial role of EU funding for addressing the climate challenge, the president-elect is showing complete disregard for the future of our planet,” he said. –Dave Keating, [European Voice, 11 September 2014](#)

Just two days after being appointed by Jean-Claude Juncker, the EU’s new climate and energy commissioner is under pressure to drop his shares in two oil companies which members of European parliament say represent a conflict of interest. The MEPs say EU’s proposed new climate and energy commissioner, Miguel Arias Cañete, must dispose of any oil company shareholdings before they consider giving his nomination a green light at European parliament hearings later this month. One environment committee member, the German social-democrat Jo Leinen, told the Guardian there was “no guarantee” that Miguel Arias Cañete would be confirmed at European Parliament hearings, which have powers to send back proposed commissioner lists to Juncker. –Arthur Neslen, [The Guardian, 12 September 2014](#)

Skepticism of global warming may be more widespread than it is portrayed in the media, with nearly half of British lawmakers being labelled as climate “skeptics” and India’s prime minister casting doubt on claims of man-made global warming. A special report by PR Week shows that a vast majority of conservative members of UK Parliament are [doubtful] that mankind is the main driver behind global temperature rises. While a slight majority (51 percent) of members of parliament (MPs) say that global warming “is largely man made” and an established fact, nearly

three quarters of conservative MPs disagree. –Michael Bastasch, [The Daily Caller, 10 September 2014](#)

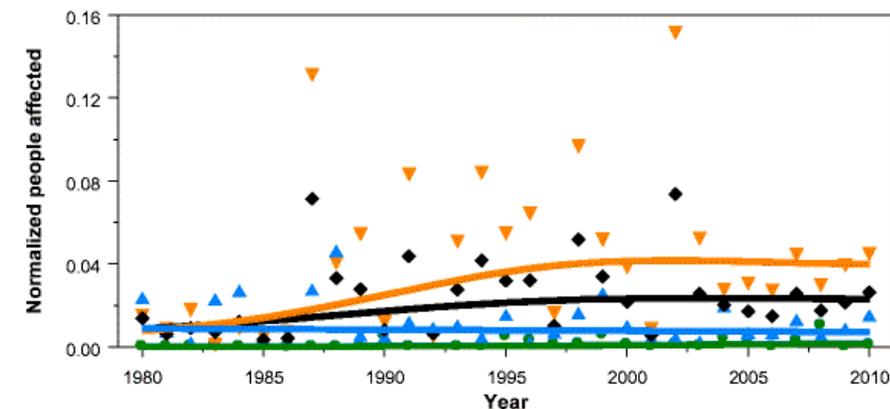
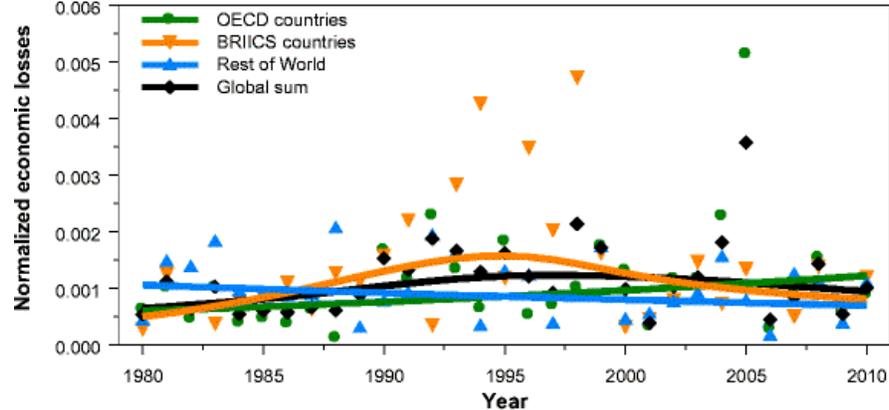
## **R. 2014 HURRICANE SEASON A BUST SO FAR – NO NAMED STORMS AT PEAK OF SEASON, LAST TIME WAS 1992**

So far, four storms have gotten names in the Atlantic this year. In records going back to 1851, Sept. 10 is the day when the odds are greatest there will be at least one tropical storm or hurricane somewhere in the Atlantic. From Bloomberg: The statistical peak of the Atlantic hurricane season has arrived and for the...

<http://wattsupwiththat.com/2014/09/10/2014-hurricane-season-a-bust-so-far-no-named-storms-at-peak-of-season-last-time-was-1992/>

## **S. A NEW PAPER ON DISASTER LOSSES AND CLIMATE CHANGE**

**ROGER PIELKE JR.'S**



A new paper appeared [in \*Climatic Change\* this week by Visser et al.](#) which looks at disasters and climate change (open access [here](#)). Like other studies and the IPCC assessment, Visser et al. find no trends in normalized disaster losses, looking at several metrics of economic and human losses.

They conclude:

The absence of trends in normalized disaster burden indicators appears to be largely consistent with the absence of trends in extreme weather events. This conclusion is more qualitative for the

number of people killed. As a consequence, vulnerability is also largely stable over the period of analysis.

The top line conclusion here is not surprising, though it is interesting because it uses independent methods on largely independent data. It is consistent with previous data and analyses (e.g., Bouwer 2011, Neumayer and Bartel 2011, Mohleji and Pielke 2014) as well as with the conclusions of the recent IPCC assessments (SREX and AR5).

What is perhaps most interesting about this new paper is their discussion of vulnerability. Some have argued that our methodological inability to fully account for possible changes in vulnerability to losses over time may mask a climate change signal in the data. (It's gotta be there somewhere!) This line of argument has always been suspect, because there are not relevant trends in phenomena such as floods and hurricanes which would lead to an expectation of increasing normalized losses.

Visser et al. take this issue on and offer several explanations as to why vulnerability does not mask any hidden signals:

Firstly, global disaster management initiatives have only recently been put in place. The Hyogo Framework for Action (HFA) was adopted by 168 Member States of the United Nations in 2005 to take action to reduce vulnerabilities and risks to disasters (UNISDR, [2011](#)). Although these highly important efforts will certainly pay off in the near future, it is unclear whether they are reflected in the sample period chosen for this study. Similar conclusions are drawn in IPCC ([2014](#)). . .

Secondly, it is unclear to what extent adaptation measures work in practice. Heffernan ([2012](#)) argues that many countries, and even the richest, are ill-prepared for weather extremes. As an example, he names Hurricane Sandy, which wreaked a loss of 50 billion USD along the northeast coast of the US in 2012. As for early warning systems, Heffernan states that not all systems are functioning well. For example, in 2000, Mozambique was hit by a flood worse than any in its history, and the event was not at all anticipated. Warnings of above-average rainfall came too late and failed to convey the magnitude of the coming flood.

Thirdly, a positive trend in vulnerability may be offset by the increasing number of people moving from rural to urban environments, often situated in at-risk areas (UN [2012](#)). Since many large cities lie along coastlines, these movements will make people more vulnerable to land-falling hurricanes (Pielke et al. [2008](#)), coastal flooding and heatwaves (due the urban heat island effect). With regard to economic losses, Hallegatte ([2011](#)) argues that these migration movements may have caused disaster losses to grow faster than wealth.

Fourthly, it is unclear how political tensions and violent conflicts have evolved over large regional scales since 1980. On the one hand, Theisen et al. ([2013](#)) show that the number of armed conflicts and the number of battle deaths have decreased slightly at the global scale since 1980. On the other hand, these methods are rather crude as far as covering all aspects of political tensions are concerned (Leaning and Guha-Sapir et al. [2013](#)).

We conclude that quantitative information on time-varying vulnerability patterns is lacking. More qualitatively, we judge that a stable vulnerability  $V_t$ , as derived in this study, is not in contrast with estimates in the literature.

In short, those who claim that a signal of human caused-climate change is somehow hidden in the disaster loss record are engaging in a bit of unjustified wishful thinking. The data and evidence says otherwise.

The bottom line? Once again, we see further reinforcement for the conclusion that there is no

detectable evidence of a role for human-caused climate change in increasing disaster losses. In plain English: Disaster losses have been increasing, but it is not due to climate change.

Posted by [Roger Pielke, Jr.](#) at [7/22/2014 07:14:00 AM](#)

<http://rogerpielkejr.blogspot.com/>

## **T. STAKES HIGHER THAN EVER, CLIMATE SUMMIT AIMS TO BE TURNING POINT FOR GLOBAL ACTION**

A United Nations chief dismayed at the lack of resolve toward the climate crisis; a daunting deadline for negotiating a new treaty; 125 or so heads of state; a sprawling agenda of fossil fuels, food, forestry and finance; a train of think tanks hauling gigabytes of green data; countless teach-ins, press conferences, art shows—plus tens or even hundreds of thousands of activists marching through midtown Manhattan, demanding action now.

<http://insideclimatenews.org/news/20140912/stakes-higher-ever-climate-summit-aims-be-turning-point-global-action>

David Sassoon

## **U. NASA GISS TWEAKS THE SHORT-TERM GLOBAL TEMPERATURE TREND UPWARDS**

SEE UPDATE 2 AT END OF POST Guest Post by Bob Tisdale GISS released its August 2014 global surface temperature data today. As I was preparing the graphs for the August 2014 surface and lower troposphere temperature update, I noticed a sizeable jump in the short-term trend in the GISS data. (I'll try to post...

<http://wattsupwiththat.com/2014/09/15/nasa-giss-tweaks-the-short-term-global-temperature-trend-upwards/>

Regards

George