

**The Week That Was: 2014-09-20 (September 20, 2014)**  
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**The Science and Environmental Policy Project**

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**Quote of the Week:** *There is no harm in doubt and skepticism, for it is through these that new discoveries are made.* Richard Feynman, 1985

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**Number of the Week:** 35 years more?

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**THIS WEEK:**

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

**Climate Pep Rally?** In the US and Canada pep rallies are popular events for students who wish to show their support for the school team before a sporting event. Needless to say, the appeal of these events is far more based on emotion rather than reason. Most who attend feel good about themselves for attending.

Modern political rallies have similar appeal – emotion rather than reason. Often, at such political events, key speakers use on a series of sound-bites without a strong core of reasoning connecting the sound-bites. These speeches are in sharp contrast with the speeches of Abraham Lincoln, and other classic speakers, whose speeches would have a strong emotional appeal built on a bedrock of reasoning.

The UN Summit on global warming/climate change on September 23 in New York City, announced by UN Secretary General Ban Ki-Moon, appears to be taking on the characteristics of a sports pep rally rather than a scientific event. According to reports, there will be no announcements of significant new scientific achievements or political breakthroughs. Instead, it will be an opportunity for those attending to feel good about themselves.

As of now, the leaders of China, India, Russia, Germany, Canada, and Australia will absent. According to the EDGAR data base by the European Commission, Joint Research Center and the Netherlands Environmental Assessment Agency the countries for which the leaders are not attending are ranked Numbers 1, 3, 4, 6, 8 & 14 in 2012 world carbon dioxide (CO<sub>2</sub>) emissions.

Instead of a serious event, the main attraction will be a People's Climate March, with students being bussed in courtesy of organizations such as the Sierra Club. To accommodate this popular appeal, UN Secretary General Ban Ki-Moon has appointed Hollywood actor Leonardo DiCaprio as a UN representative on climate change. DiCaprio may be best known as the lead actor in the movie *Titanic*. See links under Climate Pep Rally and <http://edgar.jrc.ec.europa.eu/overview.php?v=CO2ts1990-2012>

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**A Friend:** The American Council on Science and Health (ACSH) announced the death of its founder, Elizabeth Whelan, a strong advocate that empirical science takes precedence over popular appeal, and a friend of SEPP. SEPP Chairman Fred Singer serves on the ACSH advisory council. The tribute to her in the *Wall Street Journal* succinctly stated a few of her many strengths.

*"...she took the sensible view that if the federal government wanted to ban something, it ought to have credible evidence for doing so."*

*“Essentially what Beth Whelan tried to do was distinguish between science and technology that helped society, such as genetically modified foods, and things that harmed society, such as smoking tobacco.*

*Anyone who spent 10 minutes with Elizabeth Whelan knew there was one thing no one could buy: her integrity. She and the organization she founded have produced a legacy that will last.”*

She leaves the world, and science, better off for having been here. See Article # 1.

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**Failed Hindcasts and Forecasts:** On his blog, Roy Spencer discusses the possible actions of the Climate Establishment if warming were occurring faster than the models project. He asserts that the climate modelers would be all too willing to make the necessary adjustments to their models, even though they are unwilling to make the necessary adjustments to reflect what is actually occurring now. Necessary adjustments would require realization that the sensitivity of the earth to a doubling of CO<sub>2</sub> is less than the 1.5°C to 4.5°C, estimated in the Charney Report to US National Academy of Sciences in 1979. The over-estimate has been largely followed in the five major Assessment Reports (ARs) by the UN Intergovernmental Panel on Climate Change (IPCC), the latest of which in 2013 repeats the 1.5°C to 4.5°C overestimate.

Recognition of the overestimate would largely eliminate the fear of global warming/climate change, resulting in a loss of justification for a large part of the Climate Establishment. Very simply, the climate modelers cannot afford to fully recognize natural causes.

In his presentation, Spencer makes a subtle, but important, correction regarding models as they over-predict surface warming since the satellite record began in 1979. He points out, that the models do not even get historic temperature trends correct. That is, they fail in what is called “hindcasts”, as well as in forecasts. See link under Challenging the Orthodoxy.

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**A Different View:** Writing in the *Wall Street Journal*, Steven Koonin presents his views of the global warming/climate change controversy. Koonin “was undersecretary for science in the Energy Department during President Barack Obama’s first term and is currently director of the Center for Urban Science and Progress at New York University. His previous positions include professor of theoretical physics and provost at Caltech ...”

Although TWTW may disagree with certain minor points, his comments largely agree with those in TWTW and as found in the reports by the Nongovernmental International Panel on Climate Change (NIPCC).

*While some parts of the models rely on well-tested physical laws, other parts involve technically informed estimation. Computer modeling of complex systems is as much an art as a science. We often hear that there is a "scientific consensus" about climate change. But as far as the computer models go, there isn't a useful consensus at the level of detail relevant to assessing human influences.*

*A crucial measure of our knowledge of feedbacks is climate sensitivity—that is, the warming induced by a hypothetical doubling of carbon-dioxide concentration. Today's best estimate of the sensitivity (between 2.7 degrees Fahrenheit and 8.1 degrees Fahrenheit) is no different, and no more certain, than it was 30 [35] years ago. And this is despite an heroic research effort costing billions of dollars.*

*Any serious discussion of the changing climate must begin by acknowledging not only the scientific certainties but also the uncertainties, especially in projecting the future. Recognizing those limits, rather than ignoring them, will lead to a more sober and ultimately more productive discussion of climate change and climate policies. **To do otherwise is a great disservice to climate science itself.*** [Boldface added]

See Article # 2.

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**OAS:** On his web site WUWT, Anthony Watts announced the formation of the Open Atmospheric Society (OAS), intended to provide a *paperless and entirely online professional organization that will represent individuals who have been unrepresented by existing professional organizations that have become more activist than [science – based] in their outlook. It also aims to provide a professional peer reviewed publication platform to produce an online journal with a unique and important requirement placed up-front for any paper submitted; it must be replicable, with all data, software, formulas, and methods submitted with the paper. Without those elements, the paper will be rejected. This focus on replicability up front is not found in other similar organizations that publish scientific results.*

Such an effort may be an important step to removing biased and irreproducible articles on climate science that appear frequently in current journals. For years, the *American Economic Review*, the publication of the American Economic Association, has had a data availability policy. Papers will be published:

*... only if the data used in the analysis are clearly and precisely documented and are readily available to any researcher for purposes of replication.*

*For econometric and simulation papers, the minimum requirement should include the data set(s) and programs used to run the final models, plus a description of how previous intermediate data sets and programs were employed to create the final data set(s). Authors are invited to submit these intermediate data files and programs as an option; if they are not provided, authors must fully cooperate with investigators seeking to conduct a replication who request them.*

Thus far, no major scholarly journals that cover climate science seem interested in making such requirements. If OAS begins to succeed, then critics of climate science may justifiably start asking: what do those publishing in journals that do not have such requirements have to hide? See links under Challenging the Orthodoxy and <https://www.aeaweb.org/aer/data.php>.

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**Temperature Trends:** According to a press release by the US National Oceanic and Atmospheric Administration (NOAA):

*...the globally averaged temperature over land and ocean surfaces for August 2014 was the highest for August since record keeping began in 1880. It also marked the 38th consecutive August with a global temperature above the 20th century average. The last below-average global temperature for August occurred in 1976.*

The press release is consistent with a similar release by NASA's Goddard Institute for Space Studies (GISS). However, the NOAA release is misleading. What is the extent of the continuous global coverage since 1880? TWTW suggests the coverage is extremely small. Second, the 20<sup>th</sup> century average has little to do with the cause of global warming and may be a continuation of a

bias in the measurements. Third, several times in the recent past, both NOAA and NASA-GISS have had to back down from such statements.

On his blog, Roy Spencer addresses the apparent inconsistency between the NOAA/NASA-GISS claims and the atmospheric measurements. He states that if the source of warming is the ocean surfaces, such as during an El Niño, there is a 2 to 3 month lag between a surface warming of the oceans and a warming of the atmosphere. Thus, it may be several months before the announcements of NOAA/NASA-GISS can be independently verified. It will be interesting to see if NOAA and NASA-GISS back-down from their announcements, for whatever the reason. It is important to note, that if it is the surface that causes the atmospheric warming, it is not the greenhouse effect, which takes place in the atmosphere.

Spencer also suggests that the high sea surface temperatures may be the result of a decline in surface wind speeds, unrelated to Anthropogenic (human-caused) Global Warming (AGW) See links under Seeking a Common Ground and Measurement Issues.

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**Sea Ice:** The Antarctic sea ice melt has yet to begin; however it is clear that the ice extent exceeds that of the entire record since systematic satellite measurements began in 1979. The Arctic sea ice melt is not yet quite over, but it will probably not meet the expectations of the global warming alarmists. The excuses why total sea ice is so extensive are almost as imaginative as those why there is no current warming trend. Once the sea ice seasons are over, TWTW will contain a further discussion. See links under Changing Cryosphere – Land / Sea Ice

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**Well Productivity:** One of the major criticisms of deep underground horizontal drilling and multi-port hydraulic fracturing of dense shale using large amounts of sand and small amounts of chemicals was the rapid decline in the production of the wells. Some experts claimed that the process cannot result in long-term increase in US production of oil and natural gas. Increasingly, it is becoming apparent that the criticism was misplaced.

There is an extensive learning curve involved in how to best use such techniques. Indeed, it appears that the well drillers continue to learn. Even though drilling rig counts in major shale formations are not increasing significantly, total production is increasing substantially. US oil and gas production from shale may be more at the beginning of the learning curve rather than at the end of it. See Article #3 and Oil and Natural Gas – the Future or the Past?

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**Number of the Week:** 35 years more? Some commentators expressing disappointment in the attendance at the Climate Pep Rally and the looming failure to reach an international agreement of carbon dioxide emissions by the end of 2015 are expressing that the goal set of 2020 was too soon and it should be 2050. Such a goal would add another 35 years from 2015.

As expressed in the Failed Hindcasts and Forecasts section above, it has been 35 years since the Charney Committee reported that a doubling of CO2 would cause a warming of the earth ranging between 1.5°C to 4.5°C. There has been no improvement since. Would another 35 years result in dramatic improvement of the official government-reported science? TWTW doubts it as long as the Climate Establishment refuses to recognize that it must successfully model the natural influences on climate before it can hope to model the human influences on climate. See

<http://www.therightclimatestuff.com/AGWScienceAssessRpt-1.pdf>

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**ARTICLES:**

For the numbered articles below, please see this week's TWTW at: [www.sepp.org](http://www.sepp.org). The articles are at the end of the pdf.

### **1. Elizabeth Whelan's Impact**

A crusader for the integrity of science in public debates.

Editorial, WSJ, Sep 18, 2014

<http://online.wsj.com/articles/elizabeth-whelan-1411081887>

### **2. Climate Science Is Not Settled**

We are very far from the knowledge needed to make good climate policy, writes leading scientist

By Steven E. Koonin, WSJ, Sep 19, 2014

<http://online.wsj.com/articles/climate-science-is-not-settled-1411143565>

### **3. Fracking Gives U.S. Energy Boom Plenty of Room to Run**

Current Top Gas Well Produces Five Times as Much as Record Setter a Decade Ago

By Russell Gold, WSJ, Sep 14, 2014

<http://online.wsj.com/articles/fracking-gives-u-s-energy-boom-plenty-of-room-to-run-1410728682>

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### **NEWS YOU CAN USE:**

#### ***Commentary: Is the Sun Rising?***

**Spooky Pause...Solar Activity Now Has Leading German (Warmist) Science Journalist Asking About "Threat Of A Little Ice Age"**

By P Gosselin, No Tricks Zone, Sep 14, 2014

<http://notrickszone.com/2014/09/14/spooky-pause-solar-activity-now-has-leading-german-warmist-science-journalist-asking-about-threat-of-a-little-ice-age/>

#### ***Challenging the Orthodoxy -- NIPCC***

**Heartland Institute Responds to Activist Groups' Attempt to Purge Texas Text Books of Inconvenient Climate Science Facts**

By Jim Lakely, James Taylor, H. Sterling Burnett, The Heartland Institute, Sep 17, 2014

<http://heartland.org/press-releases/2014/09/17/heartland-institute-responds-activist-groups-attempt-purge-texas-text-book>

#### **NCSE: Texas schoolbooks should stick to the climate dogma**

By Eric Worrall, WUWT, Sep 17, 2014

<http://wattsupwiththat.com/2014/09/17/ncse-texas-schoolbooks-should-stick-to-the-climate-dogma/>

#### **The Texas textbook massacre**

By Andrew Montford, Bishop Hill, Sep 16, 2014

<http://bishophill.squarespace.com/blog/2014/9/16/the-texas-textbook-massacre.html>

Link to article: Texas proposes rewriting school text books to deny manmade climate change

Analysis of proposed 6th grade texts show they falsely claim scientific disagreement about global warming

By Suzanne Goldenberg, The Guardian, UK, Sep 16, 2014

<http://www.theguardian.com/environment/2014/sep/16/texas-proposes-rewriting-school-text-books-to-deny-manmade-climate-change>

*[SEPP Comment: Contrary to the Guardian reporter, the scientific disagreement is real and substantial!]*

### ***Challenging the Orthodoxy***

#### **A new professional society for meteorology and climatology is announced**

By Anthony Watts, WUWT, Sep 16, 2014

<http://wattsupwiththat.com/2014/09/16/a-new-professional-society-for-meteorology-and-climatology-is-announced/>

#### **The OAS and replicability**

By Andrew Montford, Bishop Hill, Sep 17, 2014

<http://bishophill.squarespace.com/blog/2014/9/17/the-oas-and-replicability.html>

*[SEPP Comment: See link immediately above.]*

#### **Interview Supplementing My Award Acceptance Remarks at IPCC-9**

By Alan Carlin, Carlin Economics and Science, Sep 20, 2014

<http://www.carlineconomics.com/archives/1657>

#### **Reflections on Rapid Response to Unjustified Climate Alarm**

By Richard Lindzen, CATO, Sep 18, 2014

<http://www.cato.org/blog/reflections-rapid-response-unjustified-climate-alarm>

#### **UN Global Warming Propaganda Campaign: Return to Perceived Success Indicates Desperation.**

By Tim Ball, A Different Perspective, Sep 17, 2014

<http://drtimball.com/2014/un-global-warming-propaganda-campaign-return-to-perceived-success-indicates-desperation/>

#### **Leo vs. science: vanishing evidence for climate change**

By Tom Harris and Bob Carter, New York Post, Sep 14 2014

<http://nypost.com/2014/09/14/leo-v-science-vanishing-evidence-for-climate-change/>

#### **Boycotting the U.N. climate summit**

Awareness grows that faulty science would keep millions in the dark

By Willie Soon and Christopher Monckton, Washington Times, Sep 18, 2014

<http://www.washingtontimes.com/news/2014/sep/18/soon-monckton-boycotting-the-un-climate-summit/>

A new study led by K.M. Hiremath of the Indian Institute of Astrophysics shows a strong, possibly causative correlation between variations in solar activity and in monsoon rainfall.

#### **Certain Temperature and CO2 Gradients Were Required For IPCC >90% Human Caused Conclusion**

By Tim Ball, Australian Climate Sceptics, Sep 14, 2014

<http://theclimatescepticsparty.blogspot.com.au/2014/09/connecting-climate-dots.html>

#### **Climate Change and the False Case for Haste**

By Ross McKittrick, CATO, Sep 15, 2014

[http://www.cato.org/publications/commentary/climate-change-false-case-haste?utm\\_source=Cato+Institute+Emails&utm\\_campaign=e6c557c509-](http://www.cato.org/publications/commentary/climate-change-false-case-haste?utm_source=Cato+Institute+Emails&utm_campaign=e6c557c509-)

[Study of Science Announcement&utm\\_medium=email&utm\\_term=0\\_395878584c-e6c557c509-142612697&mc\\_cid=e6c557c509&mc\\_eid=0c38657326](http://www.drooy.com/2014/09/10-ways-to-tell-tuesdays-un-climate-summit-isnt-about-climate/)

### **What if the Global Warming “Pause” was “Fast Forward” Instead?**

By Roy Spencer, His Blog, Sep 15, 2014

<http://www.drooy.com/2014/09/what-if-the-global-warming-pause-was-fast-forward-instead/>

### ***Defending the Orthodoxy***

#### **Climate Change Is an Opportunity to Dramatically Reinvent the Economy**

An interview with author and activist Naomi Klein

By Hamza Shaban, The Atlantic, Sep 19, 2014 [H/t Timothy Wise]

<http://www.theatlantic.com/business/archive/2014/09/climate-change-is-an-opportunity-to-dramatically-reinvent-the-economy/380429/>

*[SEPP Comment: The science is immaterial, it is the ideology that is important.]*

#### **Preventing climate change and adapting to it are not morally equivalent**

By David Roberts, Grist, Sep 16, 2014 [H/t Timothy Wise]

<http://grist.org/climate-energy/preventing-climate-change-and-adapting-to-it-are-not-morally-equivalent/>

#### **Seven things we learned from Lord Stern's New Climate Economy report**

A major new report says the world can tackle climate change without harming economic growth. Here's the digested read

By Fiona Harvey, The Guardian, UK, Sep 16, 2014

<http://www.theguardian.com/environment/2014/sep/16/7-things-we-learned-from-lord-sterns-new-climate-economy-report>

*[SEPP Comment: Keep the subsidies flowing, and tax carbon dioxide, it won't work without them.]*

#### **Three graphs showing why climate action is good for the economy**

By Mat Hope, Carbon Brief, Sep 16, 2014

[http://www.carbonbrief.org/blog/2014/09/three-graphs-showing-why-climate-action-is-good-for-the-economy/?utm\\_source=Weekly+Carbon+Briefing&utm\\_campaign=06ef51d55c-Carbon\\_Brief\\_Weekly\\_111114&utm\\_medium=email&utm\\_term=0\\_3ff5ea836a-06ef51d55c-215218249](http://www.carbonbrief.org/blog/2014/09/three-graphs-showing-why-climate-action-is-good-for-the-economy/?utm_source=Weekly+Carbon+Briefing&utm_campaign=06ef51d55c-Carbon_Brief_Weekly_111114&utm_medium=email&utm_term=0_3ff5ea836a-06ef51d55c-215218249)

### ***Climate Pep Rally***

#### **10 Ways To Tell Tuesday's UN Climate Summit Isn't About Climate**

By Roy Spencer, His Blog, Sep 17, 2014

<http://www.drooy.com/2014/09/10-ways-to-tell-tuesdays-un-climate-summit-isnt-about-climate/>

#### **WH cranks up heat ahead of UN summit**

By Laura Barron-Lopez, The Hill, Sep 18, 2014

<http://thehill.com/policy/energy-environment/218239-white-house-cranks-up-heat-ahead-of-un-climate-summit>

#### **India won't give new deal in UN Climate Summit**

By Urmi Goswami, Economic Times, India, Sep 16, 2014 [H/t GWPF]  
[http://articles.economictimes.indiatimes.com/2014-09-16/news/53983248\\_1\\_climate-change-un-climate-summit-minded-developing-countries](http://articles.economictimes.indiatimes.com/2014-09-16/news/53983248_1_climate-change-un-climate-summit-minded-developing-countries)

### **The Uninformed, Hypocritical, Emotionally-Driven People's Climate March**

By Roy Spencer, His blog, Sep 20, 2014

<http://www.drroyspencer.com/2014/09/the-uninformed-hypocritical-emotionally-driven-peoples-climate-march/>

### **The U.N.'s Climate-Summit Charade**

Western nations keep the talks going, to justify costly de-carbonization programs at home.

By Rupert Darwall, National Review Online, Sep 18, 2014 [H/t GWPF]

<http://www.nationalreview.com/article/388320/uns-climate-summit-charade-rupert-darwall>

### **U.N.'s Climate Change Push Gains DiCaprio, but Loses India, China and Russia**

By Lucy Westcott, Newsweek, Sep 17, 2014 [H/t GWPF]

<http://www.newsweek.com/ban-ki-moon-climate-change-focus-general-assembly-270993>

### **With global conflict at the door, world leaders pursue futile climate efforts**

By Steve Goreham, Communities Digital News, Sep 18, 2014

<http://www.commdiginews.com/news-2/with-global-conflict-at-the-door-world-leaders-pursue-futile-climate-efforts-26203/>

### **Marching in step on climate change?**

By Karlyn Bowman and Jennifer Marsico, AEIdeas, Sep 18, 2014 [H/t Timothy Wise]

<http://www.aei-ideas.org/2014/09/marching-in-step-on-climate-change/>

### **Surgeon general to speak before UN climate summit**

By Timothy Cama, The Hill, Sep 18, 2014

<http://thehill.com/policy/energy-environment/218251-surgeon-general-to-speak-before-un-climate-summit>

*[SEPP Comment "The face of public health policy for the Federal government" will speak.]*

### **Bringing the Noise on Climate Change**

By Elizabeth Kolbert, The New Yorker, Sep 18, 2014 [H/t Timothy Wise]

<http://www.newyorker.com/news/news-desk/last-chance-climate-change>

### **'Climate summit' turning into an embarrassment for Obama and UN**

By Thomas Lifson, American Thinker, Sep 17, 2014 [H/t Timothy Wise]

[http://www.americanthinker.com/blog/2014/09/climate\\_summit\\_turning\\_into\\_an\\_embarrassment\\_for\\_obama\\_and\\_un.html](http://www.americanthinker.com/blog/2014/09/climate_summit_turning_into_an_embarrassment_for_obama_and_un.html)

### ***Questioning the Orthodoxy***

#### **Climate Hype Exposed**

By Paul Driessen, CFACT, Sep 18, 2014

[http://www.cfact.org/2014/09/18/cfact-report-climate-hype-exposed/?utm\\_source=CFACT+Updates&utm\\_campaign=3ba0afdcc1-Report\\_Climate\\_change\\_exposed9\\_18\\_2014&utm\\_medium=email&utm\\_term=0\\_a28eadeb56-3ba0afdcc1-270220145](http://www.cfact.org/2014/09/18/cfact-report-climate-hype-exposed/?utm_source=CFACT+Updates&utm_campaign=3ba0afdcc1-Report_Climate_change_exposed9_18_2014&utm_medium=email&utm_term=0_a28eadeb56-3ba0afdcc1-270220145)



### **Decrying “Wishful Science” on NPR(!)**

By Patrick Michaels, CATO, Sep 16, 2014

<http://www.cato.org/blog/decrying-wishful-science-npr>

### **Previous rules of thumb for climate change worsened wet/dry turned upside down**

By Anthony Watts, WUWT, Sep 15, 2014

<http://wattsupwiththat.com/2014/09/15/previous-rules-of-thumb-for-climate-change-worsened-wetdry-turned-upside-down/>

### **The Pretzel Logic of Global Warming**

By Brian C Joondeph, MD, American Thinker, Sep 18, 2014 [H/t Timothy Wise]

[http://www.americanthinker.com/blog/2014/09/the\\_pretzel\\_logic\\_of\\_global\\_warming\\_.html](http://www.americanthinker.com/blog/2014/09/the_pretzel_logic_of_global_warming_.html)

### **The Oceans Ate Global Warming?**

By Jonathon Moseley, American Thinker, Sep 15, 2014 [H/t Timothy Wise]

[http://www.americanthinker.com/2014/09/the\\_oceans\\_ate\\_global\\_warming.html](http://www.americanthinker.com/2014/09/the_oceans_ate_global_warming.html)

### **Global Warming Was Worth It**

And if we had to, we'd do it again.

By David Harsanyi, The Federalist, Sep 10, 2014 [H/t Timothy Wise]

<http://thefederalist.com/2014/09/10/global-warming-was-worth-it/>

*[SEPP Comment: On the questionable assumption that carbon dioxide brought the world out of the Little Ice Age.]*

### **The Economist Strains to Salvage AGW Theory**

By David Allison, American Thinker, Sep 13, 2014 [H/t Timothy Wise]

[http://www.americanthinker.com/blog/2014/09/the\\_economist\\_strains\\_to\\_salvage\\_agw\\_theory.html](http://www.americanthinker.com/blog/2014/09/the_economist_strains_to_salvage_agw_theory.html)

### ***Social Benefits of Carbon***

#### **Another benefit of climate change and increased CO<sub>2</sub> – trees continue to grow at a faster rate**

By Anthony Watts, WUWT, Sep 17, 2014

<http://wattsupwiththat.com/2014/09/17/another-benefit-of-climate-change-and-increased-co2-trees-continue-to-grow-at-a-faster-rate/>

Link to paper: Forest stand growth dynamics in Central Europe have accelerated since 1870

By Pretzsch, et al. Nature Communications, Sep 12, 2014

<http://www.nature.com/ncomms/2014/140912/ncomms5967/full/ncomms5967.html>

*[SEPP Comment: Buried in the paper are revealing sentences: Model results revealed climate change alone, that is, changes in temperature and precipitation, including an extended growing season, did not fully explain the observed growth trend in Norway spruce and European beech. However, if changes in air chemistry [CO<sub>2</sub>] were considered in addition, the simulated stand volume and average annual stand volume increment in beech and spruce for recent Central European conditions exceeded the values for past environmental conditions, as empirically demonstrated.]*

### ***Problems in the Orthodoxy***

#### **Julie Bishop rejects UN request to strengthen Australian climate targets**

By Lisa Cox, Sydney Morning Herald, Sep 19, 2014 [H/t GWPF]  
<http://www.smh.com.au/federal-politics/political-news/julie-bishop-rejects-un-request-to-strengthen-australian-climate-targets-20140919-10j5kk.html>

### **Scientists turn to Pope Francis and world's religions to save the planet**

Forget past arguments over Darwin or Galileo – scientists set sights on unlikely alliance with the world's religious leaders to combat climate change

By John Bingham, Telegraph, UK, Sep 18, 2014 [H/t Malcolm Ross]

<http://www.telegraph.co.uk/earth/environment/climatechange/11107434/Scientists-turn-to-Pope-Francis-and-worlds-religions-to-save-the-planet.html>

### **China insists wealthy countries should improve emission targets**

By Staff Writers, AFP, Sep 19, 2014 [H/t GWPF]

<http://www.businessinsider.com/afp-china-insists-wealthy-countries-should-improve-emission-targets-2014-9>

### **Global CO2 Fight Evaporating...Climate Experts Concede “Minimal Willingness To Really Reduce Emissions”**

By P Gosselin, No Tricks Zone, Sep 13, 2014

<http://notrickszone.com/2014/09/13/global-co2-fight-evaporating-climate-experts-concede-minimal-willingness-to-really-reduce-emissions/>

### **“Self-Inflicted Apocalypse Fascination”! Germany’s Leading Daily Fed Up With End-Of-World Scenarios, Climate Catastrophe!**

By P Gosselin, No Tricks Zone, Sep 17, 2014

<http://notrickszone.com/2014/09/17/self-inflicted-apocalypse-fascination-germanys-leading-daily-fed-up-with-end-of-world-scenarios-climate-catastrophe/>

### ***Seeking a Common Ground***

#### **The Curious Case of Record August Ocean Temperatures**

By Roy Spencer, His Blog, Sep 19, 2014

<http://www.drroyspencer.com/2014/09/the-curious-case-of-record-august-ocean-temperatures/>

#### **How to criticize with kindness**

By Judith Curry, Climate Etc. Sep 15, 2014

<http://judithcurry.com/2014/09/15/how-to-criticize-with-kindness/>

#### **JC at the National Press Club**

By Judith Curry, Climate Etc. Sep 16, 2014

<http://judithcurry.com/2014/09/16/jc-at-the-national-press-club/#more-16889>

#### **The opinion-forming power of protest**

By Martin Livermore, Scientific Alliance, Sep 19, 2014

<http://scientific-alliance.org/scientific-alliance-newsletter/opinion-forming-power-protest>

### ***Measurement Issues***

#### **August and June-August global temperatures each reach record high, driven largely by record warm global oceans**

From Press Release NOAA, Science Daily, Sep 18, 2014

<http://www.sciencedaily.com/releases/2014/09/140918111917.htm>

### **Are Record Ocean Surface Temperatures Due to Record Low Wind Speeds?**

By Roy Spencer, His Blog, Sep 18, 2014

<http://www.drroyspencer.com/2014/09/are-record-ocean-surface-temperatures-due-to-record-low-wind-speeds/>

### **Gavin's "warmest August ever" shows 8°C to 12.6°C temperature anomaly differences over only 276 miles**

By Staff Writer, Hockey Schtick, Sep 16, 2014

<http://hockeyschtick.blogspot.com/2014/09/gavins-warmest-august-ever-shows-8c-to.html>

### **NASA GISS Tweaks the Short-Term Global Temperature Trend Upwards**

By Bob Tisdale, WUWT, Sep 15, 2014

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

### **Is the Australian Temperature record Accurate?**

By Anthony Cox, Australian Climate Skeptics, Sep 15, 2014

<http://theclimatescepticsparty.blogspot.com.au/2014/09/is-australian-temperature-record.html>

### **Homogenisation of Williamstown temperatures, draws attention to hot Newcastle in 1878**

By Jennifer Marohasy, Her Blog, Sep 15, 2014

<http://jennifermarohasy.com/2014/09/homogenisation-of-williamstown-temperatures-draws-attention-to-hot-newcastle-in-1878/>

*[SEPP Comment: Ignoring solid long-term data in favor of short-term data that has the right message.]*

### **Claim: Tornadoes occurring earlier in “Tornado Alley”**

By Anthony Watts, WUWT, Sep 17, 2014

<http://wattsupwiththat.com/2014/09/17/claim-tornadoes-occurring-earlier-in-tornado-alley/>

### **Statement from the Open Atmospheric Society on the paper ‘Peak tornado activity is occurring earlier in the heart of “Tornado Alley”**

By Anthony Watts, WUWT, Sep 19, 2014

<http://wattsupwiththat.com/2014/09/19/statement-from-the-open-atmospheric-society-on-the-paper-peak-tornado-activity-is-occurring-earlier-in-the-heart-of-tornado-alley/>

*[SEPP Comment: Major improvements in instrumentation increase detection.]*

### **Global carbon cycle may require reappraisal of historical climate events**

By Staff Writers, Miami FL (SPX) Sep 17, 2014

Link to paper: Interpreting carbonate and organic carbon isotope covariance in the sedimentary record

By Amanda M. Oehlert & Peter K. Swart, Nature Communications, Aug 19, 2014

<http://www.nature.com/ncomms/2014/140819/ncomms5672/full/ncomms5672.html>

*[SEPP Comment: It is a great stretch to apply what happened in a small section of the tropics to the global atmosphere.]*

***Changing Weather***

### **Asian monsoon much older than previously thought**

By Staff Writers, Tempe AZ (SPX), Sep 16, 2014

[http://www.terradaily.com/reports/Asian\\_monsoon\\_much\\_older\\_than\\_previously\\_thought\\_999.html](http://www.terradaily.com/reports/Asian_monsoon_much_older_than_previously_thought_999.html)

Link to paper: Asian monsoons in a late Eocene greenhouse world,

By Licht, et al. Nature, Sep 14, 2014

<http://www.nature.com/nature/journal/vaop/ncurrent/full/nature13704.html>

### **Claim: Fall foliage season may be later, but longer on a warmer Earth**

By Anthony Watts, WUWT, Sep 18, 2014

<http://wattsupwiththat.com/2014/09/18/claim-fall-foliage-season-may-be-later-but-longer-on-a-warmer-earth/>

### **Dutch unveil big plan to fight rising tides**

By Staff Writers, The Hague (AFP), Sept 16, 2014

[http://www.terradaily.com/reports/Dutch\\_unveil\\_big\\_plan\\_to\\_fight\\_rising\\_tides\\_999.html](http://www.terradaily.com/reports/Dutch_unveil_big_plan_to_fight_rising_tides_999.html)

*[SEPP Comment: Adaption makes sense. Contrary to the implications in the article, there is no evidence that sea level rise is increasing or that global warming will result in stronger storm surges.]*

### **Changing Seas**

#### **New paper finds global sea levels rose < 7 inches during 20th century, with no acceleration**

By Staff Writer, Hockey Schtick, Sep 19, 2014

<http://hockeyschtick.blogspot.com/2014/09/new-paper-finds-global-sea-levels-rose.html>

Link to paper: Global and regional sea level change during the 20th century

By Manfred Wenzel and Jens Schröter, Journal of Geophysical Research, Sep 19, 2014

<http://onlinelibrary.wiley.com/doi/10.1002/2014JC009900/abstract>

#### **[Another] New paper finds North Carolina sea levels rising < 7 inches per century**

By Staff Writer, Hockey Schtick, Sep 15, 2014

<http://hockeyschtick.blogspot.com/2014/09/new-paper-finds-north-carolina-sea.html>

Link to paper: Quantifying the contribution of sediment compaction to late Holocene salt-marsh sea-level reconstructions, North Carolina, USA

By Brain, et al., Quaternary Research, Sep 12, 2014

<http://www.sciencedirect.com/science/article/pii/S0033589414000970>

#### **New paper predicts Antarctica will only contribute a tiny -.87 to +2.5 inches of sea level rise by 2100**

By Staff Writer, The Hockey Schtick, Sep 14, 2014

<http://hockeyschtick.blogspot.com/2014/09/new-paper-predicts-antarctica-will-only.html>

Link to paper: A model study of the effect of climate and sea-level change on the evolution of the Antarctic Ice Sheet from the Last Glacial Maximum to 2100

By M.N.A. Maris, et al. Climate Dynamics, Sep 13, 2014

<http://link.springer.com/article/10.1007/s00382-014-2317-z>

### **Virginia Sea Level**

By Willis Eschenbach, WUWT, Sep 13, 2014

<http://wattsupwiththat.com/2014/09/13/virginia-sea-level/>

### ***Changing Cryosphere – Land / Sea Ice***

#### **Extent of Antarctic sea ice reaches record levels, scientists say**

By Jane Ryan and Sam Ikin, Via ICECAP, Sep 17, 2014

[http://icecap.us/index.php/go/joes-blog/extent\\_of\\_antarctic\\_sea\\_ice\\_reaches\\_record\\_levels\\_scientists\\_say/](http://icecap.us/index.php/go/joes-blog/extent_of_antarctic_sea_ice_reaches_record_levels_scientists_say/)

Note by ICECAP: “An examination of the zonal winds at the surface (yellows and reds westerly, blues easterly) show no apparent correlation to expanded ice cover.”

#### **Antarctica – where more ice and less ice is proof of climate change**

By Jo Nova, Her blog, Sep 16, 2014

<http://joannenova.com.au/2014/09/antarctica-where-more-ice-and-less-ice-is-proof-of-climate-change/#more-37932>

Link to paper: Modelled glacier response to centennial temperature and precipitation trends on the Antarctic Peninsula

Davies, et al. Nature Climate Change, Sep 14, 2014

<http://www.nature.com/nclimate/journal/vaop/ncurrent/full/nclimate2369.html>

[SEPP Comment: Nova brings up the volcanoes in the area that the paper fails to mention.]

#### **Claim: New Antarctic sea-ice extent due to wind and ‘atmospheric warming’ – what warming?**

By Anthony Watts, WUWT, Sep 15, 2014

<http://wattsupwiththat.com/2014/09/15/claim-new-antarctic-sea-ice-extent-due-to-wind-and-atmospheric-warming-what-warming/>

#### **Arctic & Antarctic sea ice extent demonstrates the bipolar seesaw theory of climate**

By Staff Writer, Hockey Schtick, Sep 18, 2014

<http://hockeyschtick.blogspot.com/2014/09/arctic-antarctic-sea-ice-extent.html>

[SEPP Comment: Support of a paper published on March 30, 2014]

#### **Antarctic sea ice set for record high as Arctic heads for sixth lowest extent**

Antarctica poised for record high as figures show Arctic sea ice was millions of square kilometres below long-term average

By Adam Vaughan, Guardian, UK, Sep 17, 2014

[http://www.theguardian.com/environment/2014/sep/17/antarctica-sea-ice-record-high-arctic-sixth-lowest-extent?CMP=tw\\_t\\_gu](http://www.theguardian.com/environment/2014/sep/17/antarctica-sea-ice-record-high-arctic-sixth-lowest-extent?CMP=tw_t_gu)

#### **Antarctic confusion**

By Andrew Montford, Bishop Hill, Sep 18, 2014

<http://bishophill.squarespace.com/blog/2014/9/18/antarctic-confusion.html>

Link to article: Record sea ice around Antarctica due to global warming

By Staff Writer, New Scientist, Sep 17, 2014

<http://www.newscientist.com/article/mg22329871.800-record-sea-ice-around-antarctica-due-to-global-warming.html#.VBxJtvldV-7>

[SEPP Comment: According to the New Scientist, the growth in Antarctic sea ice is caused by global warming.]

#### **New paper links Arctic sea ice extent to absorption of sunlight by clouds**

By Staff Writer, The Hockey Schtick, Sep 14, 2014

<http://hockeyschtick.blogspot.com/2014/09/new-paper-links-arctic-sea-ice-extent.html>

Link to paper: Connecting early summer cloud-controlled sunlight and late summer sea ice in the Arctic

By Yong-Sang Choi , et al. Journal of Geophysical Research, Sep 12, 2014

<http://onlinelibrary.wiley.com/doi/10.1002/2014JD022013/abstract;jsessionid=7112D7AAEA894064F887EBEDB4FF9BD2.f04t04>

### **Just How Sure Are The Sea Ice “Experts” About The Arctic Melt Continuing? Looks Very Close To Zero**

By P Gosselin, No Tricks Zone, Sep 18, 2014

<http://notrickszone.com/2014/09/18/just-how-sure-are-sea-ice-experts-about-the-arctic-melting-continuing-looks-very-close-to-zero/>

### ***Changing Earth***

#### **Meteorite that doomed the dinosaurs helped the forests bloom**

By Staff Writers, Tucson AZ (SPX), Sep 17, 2014

[http://www.terradaaily.com/reports/Meteorite that doomed the dinosaurs helped the forests bloom\\_999.html](http://www.terradaaily.com/reports/Meteorite%20that%20doomed%20the%20dinosaurs%20helped%20the%20forests%20bloom%20999.html)

*[SEPP Comment: Speculative.]*

### ***Agriculture Issues & Fear of Famine***

#### **Greening the world’s deserts**

By Judith Curry, Climate Etc. Sep 17, 2014

<http://judithcurry.com/2014/09/17/greening-the-worlds-deserts/>

### ***Un-Science or Non-Science?***

#### **An uncertain future for global farming under climate change, study shows**

By Robert McSweeney, Carbon Brief, Sep 17, 2014

[http://www.carbonbrief.org/blog/2014/09/an-uncertain-future-for-global-farming-under-climate-change-study-shows/?utm\\_source=Weekly+Carbon+Briefing&utm\\_campaign=06ef51d55c-Carbon\\_Brief\\_Weekly\\_111114&utm\\_medium=email&utm\\_term=0\\_3ff5ea836a-06ef51d55c-215218249](http://www.carbonbrief.org/blog/2014/09/an-uncertain-future-for-global-farming-under-climate-change-study-shows/?utm_source=Weekly+Carbon+Briefing&utm_campaign=06ef51d55c-Carbon_Brief_Weekly_111114&utm_medium=email&utm_term=0_3ff5ea836a-06ef51d55c-215218249)

Link to paper: Global Agricultural Land Resources – A High Resolution Suitability Evaluation and Its Perspectives until 2100 under Climate Change Conditions

By Zabel, Putzenlechner, and Mauser, PLOS One, Sep 17, 2014

<http://www.plosone.org/article/info%3Adoi%2F10.1371%2Fjournal.pone.0107522>

*[SEPP Comment: Contrary to assertions in the article, there is no basis to assume that with global warming much of Africa will have less cropland and fewer harvests per year. As noted by the satellite data, the warming is occurring outside of the tropics.]*

#### **Flooding from storm surge would threaten D.C. infrastructure, report says**

By Lori Montgomery, WP, Sep 16, 2014 [H/t Timothy Wise]

[http://www.washingtonpost.com/business/economy/flooding-from-storm-surge-would-threaten-dc-infrastructure-report-says/2014/09/15/43b2c7fe-3cfd-11e4-9587-5dafd96295f0\\_story.html?hpid=z2](http://www.washingtonpost.com/business/economy/flooding-from-storm-surge-would-threaten-dc-infrastructure-report-says/2014/09/15/43b2c7fe-3cfd-11e4-9587-5dafd96295f0_story.html?hpid=z2)

And last year, a Maryland commission recommended adopting an official forecast of two feet of sea-level rise by 2050 — at the high end of the scientific spectrum.

*[SEPP Comment: The high end of the speculative spectrum would be more appropriate.]*

### **Sierra Club and Sierra Club Foundation Accused of Tax Law Violations**

By Anthony Watts, WUWT, Sep 17, 2014

<http://wattsupwiththat.com/2014/09/17/sierra-club-and-sierra-club-foundation-accused-of-tax-law-violations/>

Link to report: Bootleggers and Baptists ... and Hucksterism: How the Sierra Club and the Sierra Club Foundation Violate Non-Profit Law

By David Schnare, E&E Legal, Sep 2014

<http://eelegal.org/wp-content/uploads/2014/09/Bootleggers-and-Baptists-The-Sierra-Club-Hucksterism-An-EE-Legal-Report.pdf>

*[SEPP Comment: How did they find their prey when the CO2 concentration was some 10 times that of today?]*

### ***Communicating Better to the Public – Exaggerate, or be Vague?***

**Climate action won't break the bank, report says**

By Laura Barron-Lopez, The Hill, Sep 16, 2014

<http://thehill.com/policy/energy-environment/217833-climate-action-wont-break-the-bank-report-says>

The New Climate Economy is the flagship project of the Global Commission on the Economy and Climate. Chaired by former Mexican President Felipe Calderón, and co-chaired by renowned economist Lord Nicholas Stern, the Commission comprises 24 leaders from 19 countries, and is led by a core team under Programme Director Jeremy Oppenheim.

### ***Communicating Better to the Public – Make things up.***

**Debunking the Holocene 'Sixth Mass Extinction': 250,000 years from now at current rate**

By Staff Writer, The Hockey Schtick, Sep 18, 2014

<http://hockeyschtick.blogspot.com/2014/09/debunking-holocene-sixth-mass.html>

**And then they came for The Holocene: New paper suggests "removing the Holocene Epoch from the geologic timescale"**

By Staff Writer, Hockey Schtick, Sep 15, 2014

<http://hockeyschtick.blogspot.com/2014/09/and-then-they-came-for-holocene-new.html>

**Claim: Global shift away from cars saves US\$100 trillion, eliminates 1,700 MT of CO2 pollution**

By Anthony Watts, WUWT, Sep 17, 2014

<http://wattsupwiththat.com/2014/09/17/claim-global-shift-away-from-cars-saves-us100-trillion-eliminates-1700-mt-of-co2-pollution/>

**Greens: Climate change to add up to \$60 billion to wildfire costs**

By Timothy Cama, The Hill, Sep 16, 2014

<http://thehill.com/policy/energy-environment/217829-greens-climate-change-to-add-up-to-60-billion-to-wildfire-costs>

Link to report: Flammable Planet: Wildfires and the Social Cost of Carbon

By Peter Howard, The Cost of Carbon Project, Sep 2014

[http://costofcarbon.org/files/Flammable\\_Planet\\_Wildfires\\_and\\_Social\\_Cost\\_of\\_Carbon.pdf](http://costofcarbon.org/files/Flammable_Planet_Wildfires_and_Social_Cost_of_Carbon.pdf)

*[SEPP Comment: A joint report endorsed by the Environmental Defense Fund, Institute for Policy Integrity and the National Resources Defense Council. Falsely claims a scientific consensus. Claims the three Integrated Assessment Models – DICE, FUND and PAGE – do not account for the costs of wildfires caused by climate change. Wildfires are declining!]*

## **Ian Stirling now says the polar bear that “died of climate change” last year was “in his prime”**

By Susan Crockford, Polar Bear Science, Sep 18, 2014

<http://polarbearsience.com/2014/09/18/ian-stirling-now-says-the-polar-bear-that-died-of-climate-change-last-year-was-in-his-prime/#more-5871>

## **Unbelievable but true: Political science Phd and former Greenpeace activist tailors Wikipedia climate entries to suit IPCC line**

By Sebastian Lüning and Fritz Vahrenholt, Trans. P Gosselin, No Tricks Zone, Sep 19, 2014

<http://notrickszone.com/2014/09/19/climate-gatekeepereditor-at-german-language-wikipedia-would-even-make-william-connelley-blush/>

## ***Communicating Better to the Public – Go Personal.***

### **Budget Chief: Denying Climate Change ‘Makes You a Member of the Flat Earth Society’**

By Penny Starr, CNS News, Sep 19, 2014

<http://www.cnsnews.com/news/article/penny-starr/budget-chief-denying-climate-change-makes-you-member-flat-earth-society>

*[SEPP Comment: The director of the Office of Management and Budget admits that budget items are scored based on imaginary numbers – influence on global warming/climate change.]*

## ***Communicating Better to the Public – Use Propaganda on Children***

### **Curtain, reviews come down on taxpayer-funded climate change musical**

By Perry Chiaramonte, Fox News, Sep 17, 2014 [H/t Timothy Wise]

<http://www.foxnews.com/politics/2014/09/17/curtain-reviews-come-down-on-taxpayer-funded-climate-change-musical/>

## ***Questioning European Green***

### **The climate: biggest loser of the new Commission?**

By Staff Writers, EurActiv, Sep 13, 2014 [H/t GWPF]

<http://www.euractiv.com/sections/climate-environment/climate-biggest-loser-new-commission-308420>

*[SEPP Comment: How can the climate lose?]*

## **German Green Energy Policies Making Electricity a Luxury Good**

By Thomas Lifson, American Thinker, Sep 13, 2014 [H/t Timothy Wise]

[http://www.americanthinker.com/blog/2014/09/german\\_green\\_energy\\_policies\\_making\\_electricity\\_a\\_luxury\\_good.html](http://www.americanthinker.com/blog/2014/09/german_green_energy_policies_making_electricity_a_luxury_good.html)

## ***Questioning Green Elsewhere***

### **Is it “Moral” to Restrict Fossil Fuel Use to Mitigate Future Sea Level Rise?**

By Patrick J. Michaels & Paul C. "Chip" Knappenberger, CATO, Sep 16, 2014

<http://www.cato.org/blog/it-moral-restrict-fossil-fuel-use-mitigate-future-sea-level-rise>

## **Greens v. the poor: It’s a movement of the ‘haves’**

By Naomi Schaefer Riley, New York Post, Sep 17, 2014 [H/t Timothy Wise]

<http://nypost.com/2014/09/17/greens-v-the-poor-its-a-movement-of-the-haves/>

## **Voters Care About Jobs, Economy, Not Green Agenda**

Editorial, IBD, Sep 16, 2014



<http://news.investors.com/ibd-editorials/091614-717650-global-warming-not-one-of-world-top-problems.htm>

### ***Funding Issues***

#### **Green aid test for U.N. climate summit as poor seek \$15 bln**

By Alister Doyle, Reuters, Sep 18, 2014 [H/t GWPF]

<http://www.dailymail.co.uk/wires/reuters/article-2760546/Green-aid-test-U-N-climate-summit-poor-seek-15-bln.html>

#### **Richard Branson failed to deliver on \$3bn climate change pledge**

New book by Naomi Klein claims that Virgin founder gave less than a tenth of cash promised to develop low carbon fuel

Naomi Klein: the hypocrisy behind the big business climate change battle

By Suzanne Goldenberg, Guardian, Sep 13, 2014 [H/t WUWT]

<http://www.theguardian.com/environment/2014/sep/13/richard-branson-failed-climate-change-pledge>

[SEPP Comment: The hypocrisy is big government claiming it is fighting global warming/climate change.]

#### **Rich philanthropists urged to invest in ‘saving civilisation’ by putting money into fighting global warming instead of other green causes**

By Tom Bawden, Independent, UK, Sep 15, 2014 [H/t Bishop Hill]

<http://www.independent.co.uk/environment/climate-change/rich-philanthropists-urged-to-invest-in-saving-civilisation-by-putting-money-into-fighting-global-warming-instead-of-other-green-causes-9732484.html>

[SEPP Comment: Saving Civilization!! By destroying affordable electricity that is critical for modern civilization?]

### ***The Political Games Continue***

#### **Bobby Jindal: How the ‘Radical Left’ Uses Energy Costs to Control Americans**

By Kelsey Harkness, The Daily Signal, Sep 17, 2014 [H/t Timothy Wise]

<http://dailysignal.com/2014/09/17/bobby-jindal-radical-left-uses-energy-control-americans/>

#### **Bobby Jindal Blasts Obama Energy Team As ‘Science Deniers’**

As a possible prelude to a presidential run, the Louisiana governor turns the tables on Democrats

By Lincoln Mitchell, New York Observer, Sep 16, 2014

<http://observer.com/2014/09/bobby-jindal-blasts-obama-energy-team-as-science-deniers/>

#### **Democrats try to balance environmental and business interests in Virginia**

By Jenna Portnoy, Washington Post, Sep 13, 2014 [H/t Timothy Wise]

[http://www.washingtonpost.com/local/virginia-politics/democrats-try-to-balance-environmental-and-business-interests-in-virginia/2014/09/13/0bcf47da-3939-11e4-bdfb-de4104544a37\\_story.html?hpid=z3](http://www.washingtonpost.com/local/virginia-politics/democrats-try-to-balance-environmental-and-business-interests-in-virginia/2014/09/13/0bcf47da-3939-11e4-bdfb-de4104544a37_story.html?hpid=z3)

[SEPP Comment: Promoting global warming/climate change fear and profiting from it.]

### ***Cap-and-Trade and Carbon Taxes***

#### **Why British Columbia’s Carbon Tax Is Not applicable to America**

By Marlo Lewis, CEI, Sep 16, 2014

[http://cei.org/sites/default/files/Marlo%20Lewis%20-%20Why%20British%20Columbia%27s%20Carbon%20Tax%20Is%20Not%20Applicable%20to%20America\\_0.pdf](http://cei.org/sites/default/files/Marlo%20Lewis%20-%20Why%20British%20Columbia%27s%20Carbon%20Tax%20Is%20Not%20Applicable%20to%20America_0.pdf)

[SEPP Comment: A Trojan horse for more taxes.]

### ***EPA and other Regulators on the March***

#### **No joke: Emails show ‘collusion’ between Obama’s EPA, environmental lobby**

Report uses open records laws to force transparency on secretive agency

By Stephen Dinan, Washington Times, Sep 15, 2014

<http://www.washingtontimes.com/news/2014/sep/15/emails-show-collusion-between-epa-environmental-lo/>

#### **EPA Doubles Number of Coal Plant Closings**

By Chriss Street, Breitbart, Sep 16, 2014 [H/t Timothy Wise]

<http://www.breitbart.com/Big-Government/2014/09/16/EPA-Doubles-Number-of-Coal-Plant-Closings>

#### **EPA: Malfunctions Will No Longer Shield Plants from Emissions Penalties**

By Sonal Patel, Power, Sep 17, 2014

[http://www.powermag.com/epa-malfunctions-will-no-longer-shield-plants-from-emissions-penalties/?hq\\_e=el&hq\\_m=2948562&hq\\_l=5&hq\\_v=5e660500d0](http://www.powermag.com/epa-malfunctions-will-no-longer-shield-plants-from-emissions-penalties/?hq_e=el&hq_m=2948562&hq_l=5&hq_v=5e660500d0)

#### **EPA to Regulate CO2 Emissions from Aircraft**

By Marlo Lewis, Global Warming.org, Sep 16, 2014

<http://www.globalwarming.org/2014/09/16/epa-to-regulate-co2-emissions-from-aircraft/>

#### **EPA extends climate rule comment period**

By Laura Barron-Lopez, The Hill, Sep 16, 2014

<http://thehill.com/policy/energy-environment/217872-administration-pushes-climate-rule-comment-period-back>

#### **Ninety Percent of EPA Stimulus Funding for Diesel Reduction Program Misspent**

IG: ‘Significant financial management issues’

By Elizabeth Harrington, Washington Free Beacon, Sep 17, 2014 [H/t Timothy Wise]

<http://freebeacon.com/issues/ninety-percent-of-epa-stimulus-spending-for-diesel-reduction-program-misspent/>

### ***Energy Issues – Non-US***

#### **MP Iulian Iancu: Russia funds demonstrations against shale gas in Europe**

By Staff Writer, Romanian Business News, Sep 19, 2014 [H/t GWPF]

<http://actmedia.eu/daily/mp-iulian-iancu-russia-funds-demonstrations-against-shale-gas-in-europe/54271>

#### **The Risks to UK Electricity Supplies**

By Staff Writers, GWPF, Sep 16, 2014

<http://www.thegwpf.com/the-risk-to-uk-electricity-supplies/>

#### **Decarbonization Equals Lower Economic Growth**

By Sierra Rayne, American Thinker, Sep 12, 2014 [H/t Timothy Wise]

[http://www.americanthinker.com/blog/2014/09/decarbonization\\_equals\\_lower\\_economic\\_growth.html](http://www.americanthinker.com/blog/2014/09/decarbonization_equals_lower_economic_growth.html)

### **Businesses go solar to save millions**

By Staff Writers, Canberra, Australia (SPX), Sep 16, 2014

[http://www.solardaily.com/reports/Businesses\\_go\\_solar\\_to\\_save\\_millions\\_999.html](http://www.solardaily.com/reports/Businesses_go_solar_to_save_millions_999.html)

*[SEPP Comment: The question that remains to be answered is: what is the overall burden on the reliable producers of electricity and on the economy in general?]*

### **China Bans Use of Coal With High Ash or Sulfur to Fight Smog**

By Sarah Chen and Jing Yang, Bloomberg, Sep 16, 2014

<http://www.bloomberg.com/news/2014-09-16/china-bans-use-of-coal-with-high-ash-or-sulfur-to-combat-smog.html>

### **Exxon Said to Halt Arctic Oil Well Drilling on Sanctions**

By Alan Kat, et al. Bloomberg. Sep 19, 2014

<http://www.bloomberg.com/news/2014-09-18/exxon-said-to-halt-arctic-oil-well-drilling-on-sanctions.html>

### ***Energy Issues -- US***

#### **Think nationally, act regionally to advance potential of shale gas**

By Deborah Stine and Andrew Gellman, The Hill, Sep 17, 2014

<http://thehill.com/blogs/pundits-blog/energy-environment/217925-think-nationally-act-regionally-to-advance-potential-of>

Link to Department of Energy's Quadrennial Energy Review (QER),

By Staff Writers, DOE, No Date

<http://energy.gov/epsa/quadrennial-energy-review-qer>

*[SEPP Comment: Public comment period ends Oct 10, 2014]*

#### **U.S. Shale Revolution Supplanting Saudi, West African Oil Imports, IEA Finds**

By Charlie Passut, NGI Shale Daily, Sep 16, 2014 [H.t GWPF]

[http://www.naturalgasintel.com/articles/99722-us-shale-revolution-supplanting-saudi-west-african-oil-imports-iea-finds?utm\\_source=dlvr.it&utm\\_medium=twitter](http://www.naturalgasintel.com/articles/99722-us-shale-revolution-supplanting-saudi-west-african-oil-imports-iea-finds?utm_source=dlvr.it&utm_medium=twitter)

#### **Update on Agencies' Monitoring Efforts and Coal-Fueled Generating Unit Retirements**

By Staff Writers, GAO, Sep 15, 2014 [H/t Timothy Wise]

<http://www.gao.gov/products/GAO-14-672>

About 13 percent of coal-fueled generating capacity—42,192 megawatts (MW)—has either been retired since 2012 or is planned for retirement by 2025

*[SEPP Comment: Most of it in the next few years.]*

### ***Oil and Natural Gas – the Future or the Past?***

#### **Water pollution not from fracking, it seems — neither are “health” effects**

By Staff Writers, ACSH, Sep 16, 2014

<http://acsh.org/2014/09/water-pollution-fracking-seems-neither-health-effects/>

### **Dixon of crock green**

By Andrew Montford, Bishop Hill, Sep 15, 2014

<http://bishophill.squarespace.com/blog/2014/9/15/dixon-of-crock-green.html>

Link to paper: Proximity to Natural Gas Wells and Reported Health Status: Results of a Household Survey in Washington County, Pennsylvania

By Rabinowitz et al. Environmental Health Perspectives, Sep 10, 2014

<http://ehp.niehs.nih.gov/wp-content/uploads/advpub/2014/9/ehp.1307732.pdf>

Conclusions: The results of this study suggest that natural gas drilling activities could be associated with increased reports of dermal and upper respiratory symptoms in nearby communities and support the need for further research into health effects of natural gas extraction activities.

*[SEPP Comment: The part on health effects is speculative.]*

### **Stanford publishes a report on the balanced use of fracking**

By Anthony Watts, WUWT, Sep 13, 2014

<http://wattsupwiththat.com/2014/09/13/stanford-publishes-a-report-on-the-balanced-use-of-fracking/>

### **Glut of Oil Takes the Wind Out of Green**

By Irwin Stelzer, Sunday Times, Via GWPF, Sep 14, 2014

<http://www.thegwpf.com/irwin-stelzer-glut-of-oil-takes-the-wind-out-of-green/>

### ***Return of King Coal?***

#### **Asia Doubles Down on Coal**

By Donn Dears, Power For USA, Sep 19, 2014

<https://dddusmma.wordpress.com/2014/09/19/asia-doubles-down-on-coal/>

### ***Oil Spills, Gas Leaks & Consequences***

#### **Gas leaks from faulty wells linked to contamination in some groundwater**

By Staff Writers, Columbus OH (SPX), Sep 18, 2014

[http://www.oilgasdaily.com/reports/Gas\\_leaks\\_from\\_faulty\\_wells\\_linked\\_to\\_contamination\\_in\\_some\\_groundwater\\_999.html](http://www.oilgasdaily.com/reports/Gas_leaks_from_faulty_wells_linked_to_contamination_in_some_groundwater_999.html)

Link to paper: Noble gases identify the mechanisms of fugitive gas contamination in drinking-water wells overlying the Marcellus and Barnett Shales

By Darrah, et al. PNAS, Sep 15, 2014

<http://www.pnas.org/content/early/2014/09/12/1322107111.abstract>

### **Study Says Faulty Drilling Wells, Not Fracking, Tainted Drinking Water**

By John Murawski, Governing, Sep 16, 2014 [H/t Timothy Wise]

<http://www.governing.com/news/headlines/tt-fracking-drilling-water-study.html>

### ***Nuclear Energy and Fears***

#### **Ditch the jargon**

To attract financial institutions to new build projects, the nuclear power industry needs to avoid 'nuke-speak' and learn to talk like a banker, writes George Borvas.

By George Borvas, WNN, Sep 12, 2014

<http://www.world-nuclear-news.org/E-Ditch-the-jargon-12091401.html>

*[SEPP Comment: Some of the suggestions apply to other professions as well.]*

### **Nuclear's 'key role' in meeting climate change challenge**

By Staff Writers, WNN, Sep 11, 2014

<http://www.world-nuclear-news.org/EE-Nuclears-key-role-in-meeting-climate-change-challenge-1109144.html>

### ***Alternative, Green (“Clean”) Solar and Wind***

#### **Calling a bluff**

By Andrew Montford, Bishop Hill, Sep 18, 2014

<http://bishophill.squarespace.com/blog/2014/9/18/calling-a-bluff.html>

#### **Sun and Wind Alter Global Landscape, Leaving Utilities Behind**

By Justin Gillis, NYT, Sep 13, 2014 [H/t Timothy Wise]

<http://www.nytimes.com/2014/09/14/science/earth/sun-and-wind-alter-german-landscape-leaving-utilities-behind.html?smid=tw-nytimescience>

*[SEPP Comment: Clueless. No understanding of the costs of power interruptions to a modern society or the burden solar and wind place on existing, reliable utilities. The financiers love the subsidies – until they stop.]*

### ***Alternative, Green (“Clean”) Energy -- Other***

#### **Chevron’s Search for Alternative Fuels Stumps Best Minds**

By Joe Carroll, Bloomberg, Sep 16, 2014 [H/t Cooler Heads]

<http://www.bloomberg.com/news/print/2014-09-16/chevron-s-search-for-alternative-fuels-stumps-best-minds.html>

[Chevron CEO] Watson also said Chevron is close to recycling 100 percent of the fracking water and brine involved in drilling wells in the Marcellus Shale formation beneath Pennsylvania and neighboring Northeast states.

#### **Feds invest in biofuels for the Navy**

By Timothy Cama, The Hill, Sep 19, 2014

<http://thehill.com/policy/energy-environment/218331-feds-award-210-million-for-navy-biofuel-contracts>

*[SEPP Comment: The enormous growth of oil and gas from shale did not need \$750 million in government loan guarantees for plants and \$320 million in government research on feedstocks. This “investment” addresses no real need and it is doubtful if it will produce a return.]*

### ***California Dreaming***

#### **Bipartisanship helps make California a world leader in fighting climate change**

By Gene Beley, Central Valley Business Times, (Calf.) Sep 14, 2014 [H/t Dennis Ambler]

<http://www.centralvalleybusinesstimes.com/stories/001/?ID=26714>

*[SEPP Comment: Once California outpaced the nation in economic performance, now it outpaces the nation in unnecessary environmental regulations.]*

### ***Environmental Industry***

#### **Sierra Club and Sierra Club Foundation Accused of Tax Law Violations**

By Anthony Watts, WUWT, Sep 17, 2014

<http://wattsupwiththat.com/2014/09/17/sierra-club-and-sierra-club-foundation-accused-of-tax-law-violations/>

Link to report: Bootleggers and Baptists ... and Hucksterism: How the Sierra Club and the Sierra Club Foundation Violate Non-Profit Law

By David Schnare, E&E Legal, Sep 2014

<http://eelegal.org/wp-content/uploads/2014/09/Bootleggers-and-Baptists-The-Sierra-Club-Hucksterism-An-EE-Legal-Report.pdf>

**More Dubious Eco Laureates**

By Donna Laframboise, NFC, Sep 18, 2014

<http://nofrackingconsensus.com/2014/09/18/more-dubious-eco-laureates/>

***Other News that May Be of Interest***

**Prosecute scientific misconduct**

By Andrew Montford, Bishop Hill, Sep 16, 2014

<http://bishophill.squarespace.com/blog/2014/9/16/prosecute-scientific-misconduct.html>

Link to article: It's time to criminalise serious scientific misconduct

By Rachel Nuwer, New Scientist, Sep 15, 2014

<http://www.newscientist.com/article/mg22329864.100-its-time-to-criminalise-serious-scientific-misconduct.html#.VBxM3PlV-7>

*[SEPP Comment: A big issue is intent.]*

**Weather, Climate, Arctic Ice And The Franklin Expedition**

By Tim Ball, WUWT, Sep 15, 2014

<http://wattsupwiththat.com/2014/09/15/weather-climate-arctic-ice-and-the-franklin-expedition/>

**Bill Gates' 'Big History Project' Teaches Kids Climate Change and Population Stagnation**

By Sandra Stotsky, CNS News, Sep 18, 2014 [H/t Timothy Wise]

<http://www.cnsnews.com/commentary/sandra-stotsky/bill-gates-big-history-project-teaches-kids-climate-change-and-population>

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**BELOW THE BOTTOM LINE:**

**New paper: Dubious claims about California ocean habitat derived from tree-rings**

By Staff Writer, Hockey Schtick, Sep 19, 2014

<http://hockeyschtick.blogspot.com/2014/09/new-paper-dubious-claims-about.html>

Link to paper: Six centuries of variability and extremes in a coupled marine-terrestrial ecosystem

By Black, et al. Science, Sep 19, 2014

<http://www.sciencemag.org/content/345/6203/1498.abstract>

**Secretary of State John Kerry Explains the Greenhouse Effect**

By Myron Ebell, Global Warming.org, Sep 16, 2014

<http://www.globalwarming.org/2014/09/16/secretary-of-state-john-kerry-explains-the-greenhouse-effect/>

**Newest Climate Change Danger: GIANT SPIDERS**

By Eric Owens, Daily Caller, Sep 18, 2014 [H/t Timothy Wise]

<http://dailycaller.com/2014/09/18/newest-climate-change-danger-giant-spiders/>

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**ARTICLES:**

**1. Elizabeth Whelan's Impact**

A crusader for the integrity of science in public debates.

Editorial, WSJ, Sep 18, 2014

<http://online.wsj.com/articles/elizabeth-whelan-1411081887>

Elizabeth Whelan didn't invent the phrase "junk science," but she dedicated her life to fighting its destructive effects. Since starting the American Council on Science and Health in 1978, Beth, who died at age 71 last week, worked tirelessly to help the public and policy makers understand the uses and abuse of scientific evidence.

We recall Beth visiting our offices shortly after she began ACSH to describe her plans. Our ears perked up when Beth said that one of the things she planned to take on was the Delaney Clause, a federal law that empowers the Food and Drug Administration to ban any chemical or additive that caused cancer in laboratory rats fed vast amounts of the substance.

The FDA's outrageous interpretations of the Delaney Clause—most famously its attacks on the food sweetener saccharin—was one of our favorite fights. We might have guessed that this smart, focused and forceful woman would stay the course for some 35 years. Her formal training was in epidemiology, and she took the sensible view that if the federal government wanted to ban something, it ought to have credible evidence for doing so. In 2001 the FDA finally declared saccharin safe for consumption.

Essentially what Beth Whelan tried to do was distinguish between science and technology that helped society, such as genetically modified foods, and things that harmed society, such as smoking tobacco. In 1986 she published her most well-known book, "Toxic Terror: The Truth About the Cancer Scare."

One of the first scientists Beth attracted to ACHS's cause was Norman Borlaug, the geneticist who developed high-yield varieties of wheat that resisted disease. Beth's purpose was to organize scientists to take a public position in defense of good science. By the time of her death, ACHS's board of supporting scientists and experts numbered nearly 350.

Beth accepted corporate contributions to keep ACHS going, and her critics of course used this as a cudgel to suggest her views were tainted. Anyone who spent 10 minutes with Elizabeth Whelan knew there was one thing no one could buy: her integrity. She and the organization she founded have produced a legacy that will last.

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## **2. Climate Science Is Not Settled**

We are very far from the knowledge needed to make good climate policy, writes leading scientist  
By Steven E. Koonin, WSJ, Sep 19, 2014

<http://online.wsj.com/articles/climate-science-is-not-settled-1411143565>

The idea that "Climate science is settled" runs through today's popular and policy discussions. Unfortunately, that claim is misguided. It has not only distorted our public and policy debates on issues related to energy, greenhouse-gas emissions and the environment. But it also has inhibited the scientific and policy discussions that we need to have about our climate future.

My training as a computational physicist—together with a 40-year career of scientific research, advising and management in academia, government and the private sector—has afforded me an extended, up-close perspective on climate science. Detailed technical discussions during the past year with leading climate scientists have given me an even better sense of what we know, and don't know, about climate. I have come to appreciate the daunting scientific challenge of answering the questions that policy makers and the public are asking.

The crucial scientific question for policy isn't whether the climate is changing. That is a settled matter: The climate has always changed and always will. Geological and historical records show the occurrence of major climate shifts, sometimes over only a few decades. We know, for instance, that during the 20th century the Earth's global average surface temperature rose 1.4 degrees Fahrenheit.

Nor is the crucial question whether humans are influencing the climate. That is no hoax: There is little doubt in the scientific community that continually growing amounts of greenhouse gases in the atmosphere, due largely to carbon-dioxide emissions from the conventional use of fossil fuels, are influencing the climate. There is also little doubt that the carbon dioxide will persist in the atmosphere for several centuries. The impact today of human activity appears to be comparable to the intrinsic, natural variability of the climate system itself.

Rather, the crucial, unsettled scientific question for policy is, "How will the climate change over the next century under both natural and human influences?" Answers to that question at the global and regional levels, as well as to equally complex questions of how ecosystems and human activities will be affected, should inform our choices about energy and infrastructure.

But—here's the catch—those questions are the hardest ones to answer. They challenge, in a fundamental way, what science can tell us about future climates.

Even though human influences could have serious consequences for the climate, they are physically small in relation to the climate system as a whole. For example, human additions to carbon dioxide in the atmosphere by the middle of the 21st century are expected to directly shift the atmosphere's natural greenhouse effect by only 1% to 2%. Since the climate system is highly variable on its own, that smallness sets a very high bar for confidently projecting the consequences of human influences.

A second challenge to "knowing" future climate is today's poor understanding of the oceans. The oceans, which change over decades and centuries, hold most of the climate's heat and strongly influence the atmosphere. Unfortunately, precise, comprehensive observations of the oceans are available only for the past few decades; the reliable record is still far too short to adequately understand how the oceans will change and how that will affect climate.

A third fundamental challenge arises from feedbacks that can dramatically amplify or mute the climate's response to human and natural influences. One important feedback, which is thought to approximately double the direct heating effect of carbon dioxide, involves water vapor, clouds and temperature.

But feedbacks are uncertain. They depend on the details of processes such as evaporation and the flow of radiation through clouds. They cannot be determined confidently from the basic laws of physics and chemistry, so they must be verified by precise, detailed observations that are, in many cases, not yet available.

Beyond these observational challenges are those posed by the complex computer models used to project future climate. These massive programs attempt to describe the dynamics and interactions of the various components of the Earth system—the atmosphere, the oceans, the land, the ice and the biosphere of living things. While some parts of the models rely on well-tested physical laws,



other parts involve technically informed estimation. Computer modeling of complex systems is as much an art as a science.

For instance, global climate models describe the Earth on a grid that is currently limited by computer capabilities to a resolution of no finer than 60 miles. (The distance from New York City to Washington, D.C., is thus covered by only four grid cells.) But processes such as cloud formation, turbulence and rain all happen on much smaller scales. These critical processes then appear in the model only through adjustable assumptions that specify, for example, how the average cloud cover depends on a grid box's average temperature and humidity. In a given model, dozens of such assumptions must be adjusted ("tuned," in the jargon of modelers) to reproduce both current observations and imperfectly known historical records.

We often hear that there is a "scientific consensus" about climate change. But as far as the computer models go, there isn't a useful consensus at the level of detail relevant to assessing human influences. Since 1990, the United Nations Intergovernmental Panel on Climate Change, or IPCC, has periodically surveyed the state of climate science. Each successive report from that endeavor, with contributions from thousands of scientists around the world, has come to be seen as the definitive assessment of climate science at the time of its issue.

There is little doubt in the scientific community that continually growing amounts of greenhouse gases in the atmosphere, due largely to carbon-dioxide emissions from the conventional use of fossil fuels, are influencing the climate.

For the latest IPCC report (September 2013), its Working Group I, which focuses on physical science, uses an ensemble of some 55 different models. Although most of these models are tuned to reproduce the gross features of the Earth's climate, the marked differences in their details and projections reflect all of the limitations that I have described. For example:

- The models differ in their descriptions of the past century's global average surface temperature by more than three times the entire warming recorded during that time. Such mismatches are also present in many other basic climate factors, including rainfall, which is fundamental to the atmosphere's energy balance. As a result, the models give widely varying descriptions of the climate's inner workings. Since they disagree so markedly, no more than one of them can be right.
- Although the Earth's average surface temperature rose sharply by 0.9 degree Fahrenheit during the last quarter of the 20th century, it has increased much more slowly for the past 16 years, even as the human contribution to atmospheric carbon dioxide has risen by some 25%. This surprising fact demonstrates directly that natural influences and variability are powerful enough to counteract the present warming influence exerted by human activity.

Yet the models famously fail to capture this slowing in the temperature rise. Several dozen different explanations for this failure have been offered, with ocean variability most likely playing a major role. But the whole episode continues to highlight the limits of our modeling.

- The models roughly describe the shrinking extent of Arctic sea ice observed over the past two decades, but they fail to describe the comparable growth of Antarctic sea ice, which is now at a record high.

- The models predict that the lower atmosphere in the tropics will absorb much of the heat of the warming atmosphere. But that "hot spot" has not been confidently observed, casting doubt on our understanding of the crucial feedback of water vapor on temperature.
- Even though the human influence on climate was much smaller in the past, the models do not account for the fact that the rate of global sea-level rise 70 years ago was as large as what we observe today—about one foot per century.
- A crucial measure of our knowledge of feedbacks is climate sensitivity—that is, the warming induced by a hypothetical doubling of carbon-dioxide concentration. Today's best estimate of the sensitivity (between 2.7 degrees Fahrenheit and 8.1 degrees Fahrenheit) is no different, and no more certain, than it was 30 [35] years ago. And this is despite an heroic research effort costing billions of dollars.

These and many other open questions are in fact described in the IPCC research reports, although a detailed and knowledgeable reading is sometimes required to discern them. They are not "minor" issues to be "cleaned up" by further research. Rather, they are deficiencies that erode confidence in the computer projections. Work to resolve these shortcomings in climate models should be among the top priorities for climate research.

Yet a public official reading only the IPCC's "Summary for Policy Makers" would gain little sense of the extent or implications of these deficiencies. These are fundamental challenges to our understanding of human impacts on the climate, and they should not be dismissed with the mantra that "climate science is settled."

While the past two decades have seen progress in climate science, the field is not yet mature enough to usefully answer the difficult and important questions being asked of it. This decidedly unsettled state highlights what should be obvious: Understanding climate, at the level of detail relevant to human influences, is a very, very difficult problem.

We can and should take steps to make climate projections more useful over time. An international commitment to a sustained global climate observation system would generate an ever-lengthening record of more precise observations. And increasingly powerful computers can allow a better understanding of the uncertainties in our models, finer model grids and more sophisticated descriptions of the processes that occur within them. The science is urgent, since we could be caught flat-footed if our understanding does not improve more rapidly than the climate itself changes.

A transparent rigor would also be a welcome development, especially given the momentous political and policy decisions at stake. That could be supported by regular, independent, "red team" reviews to stress-test and challenge the projections by focusing on their deficiencies and uncertainties; that would certainly be the best practice of the scientific method. But because the natural climate changes over decades, it will take many years to get the data needed to confidently isolate and quantify the effects of human influences.

Policy makers and the public may wish for the comfort of certainty in their climate science. But I fear that rigidly promulgating the idea that climate science is "settled" (or is a "hoax") demeans and chills the scientific enterprise, retarding its progress in these important matters. Uncertainty is

a prime mover and motivator of science and must be faced head-on. It should not be confined to hushed sidebar conversations at academic conferences.

Society's choices in the years ahead will necessarily be based on uncertain knowledge of future climates. That uncertainty need not be an excuse for inaction. There is well-justified prudence in accelerating the development of low-emissions technologies and in cost-effective energy-efficiency measures.

But climate strategies beyond such "no regrets" efforts carry costs, risks and questions of effectiveness, so nonscientific factors inevitably enter the decision. These include our tolerance for risk and the priorities that we assign to economic development, poverty reduction, environmental quality, and intergenerational and geographical equity.

Individuals and countries can legitimately disagree about these matters, so the discussion should not be about "believing" or "denying" the science. Despite the statements of numerous scientific societies, the scientific community cannot claim any special expertise in addressing issues related to humanity's deepest goals and values. The political and diplomatic spheres are best suited to debating and resolving such questions, and misrepresenting the current state of climate science does nothing to advance that effort.

Any serious discussion of the changing climate must begin by acknowledging not only the scientific certainties but also the uncertainties, especially in projecting the future. Recognizing those limits, rather than ignoring them, will lead to a more sober and ultimately more productive discussion of climate change and climate policies. To do otherwise is a great disservice to climate science itself.

*Dr. Koonin was undersecretary for science in the Energy Department during President Barack Obama's first term and is currently director of the Center for Urban Science and Progress at New York University. His previous positions include professor of theoretical physics and provost at Caltech, as well as chief scientist of BP where his work focused on renewable and low-carbon energy technologies.*

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### **3. Fracking Gives U.S. Energy Boom Plenty of Room to Run**

Current Top Gas Well Produces Five Times as Much as Record Setter a Decade Ago

By Russell Gold, WSJ, Sep 14, 2014

<http://online.wsj.com/articles/fracking-gives-u-s-energy-boom-plenty-of-room-to-run-1410728682>

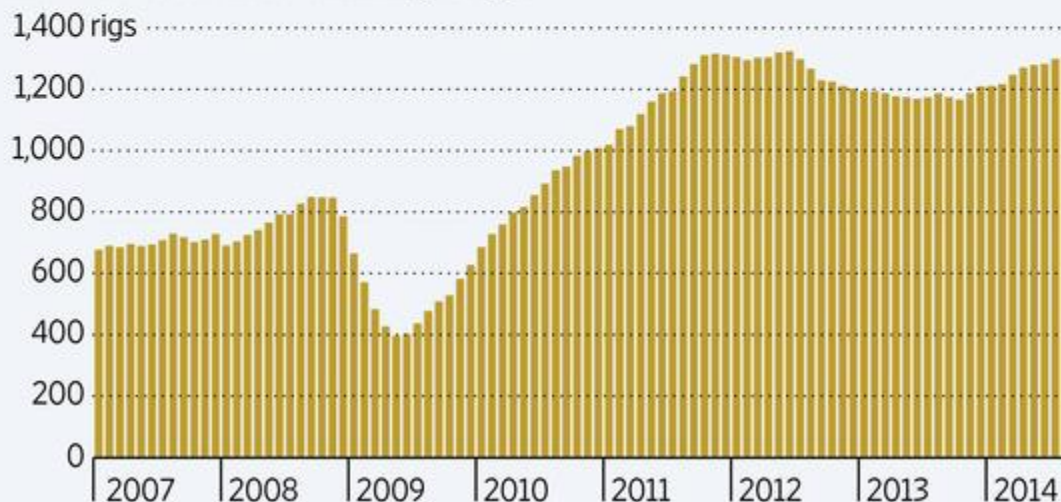
Skeptics of the U.S. energy boom say it can't last much longer because it requires drilling an ever-increasing number of wells.

But the boom already has lasted longer than anyone would have imagined just a decade ago and has more room to run. That's because oil and natural-gas wells have become more productive—an unrecognized but potent trend that should keep the fuels flowing.

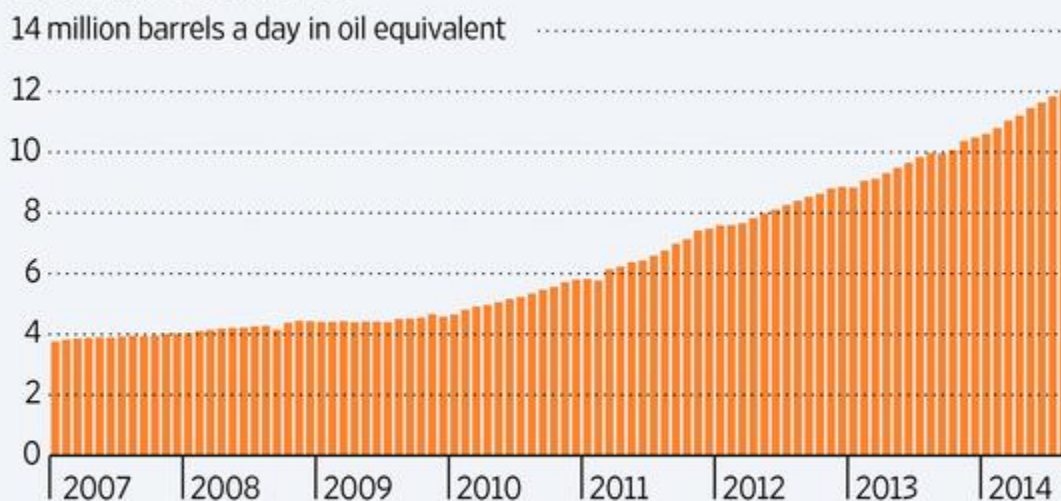
## Rock Stars

Though oil and gas rig growth has slowed, production is up due to new technology.

### Number of oil and natural-gas rigs\*



### Oil and gas production\*



\*In the Bakken, Eagle Ford, Haynesville, Marcellus, Niobrara, Permian and Utica fields

Source: Energy Information Administration

The Wall Street Journal

Back in 2003, the energy industry had just begun combining the techniques of drilling horizontal bores through shale and then using hydraulic fracturing—shooting tons of water, chemicals and sand into the rocks.

Four Sevens Oil Co. drilled the best gas well that year, in the Barnett Shale, just north of Fort Worth, Texas, according to Drillinginfo, an industry data service that searched its records at the request of The Wall Street Journal.

Four Sevens used what was then considered a whopping 2.8 million gallons of liquid and 221,000 pounds of sand in fracking the well, named the Braumbaugh after the family that owned the mineral rights.

At its peak, 5.9 million cubic feet of gas a day rushed up the well. "We were real happy with it," says Four Sevens co-founder Dick Lowe. When the state published the production data, competitors were envious.

Today, the Braumbaugh looks like a pipsqueak.

Cabot Oil & Gas Corp. drilled the best gas well in the U.S. last year, in Susquehanna County, Pa., about 110 miles northwest of Manhattan. Drilling longer horizontal legs and fracking the well repeatedly, Cabot pumped in 12.5 million gallons of liquid, more than four times the amount Four Sevens had employed, and used 13.3 million pounds of sand.

## State of the Art | Two oil wells compared

	<b>Williams 34X-14</b>	<b>Wilde Trust Unit</b>
<b>Year drilled and fracked</b>	2003	2013
<b>Company</b>	Headington Oil	EOG Resources
<b>Location</b>	Bakken (Mont.)	Eagle Ford (Texas)
<b>Gallons of liquid used</b>	326,800	9.1 million
<b>Pounds of sand used</b>	640,774	14.24 million
<b>PEAK OUTPUT (barrels/day)</b>	<b>828</b>	<b>2,748</b>

Source: DrillingInfo analysis of state records

The well produced 30.3 million cubic feet a day—five times as much as the Four Sevens record setter a decade earlier.

"That's a pretty damn good well," Mr. Lowe says. "I might have dreamed of drilling a well that size."

The U.S. oil-and-gas industry no longer spends its time trying to find new shale formations to tap. Instead, it focuses on finding ways to get more out of the formations it has found. And it is succeeding.

As a result, the U.S. has become the world's largest energy producer, natural-gas prices have remained low and U.S. oil output has helped prevent rising crude prices around the world.

Of course, bigger and better wells come with bigger price tags, leaving drillers more vulnerable to falling energy prices.

These more aggressive operations also can create environmental problems from increased sand mining and the use of more potable water for fracking. Disposing liquids used for fracking can

trigger earthquakes. Bigger fracking operations also require additional equipment and truck trips, creating more headaches for surrounding communities.

What's beyond dispute is that the newly drilled wells are better than the ones they are replacing.

The number of rigs drilling in the U.S. is basically flat, but production is rising. The federal Energy Information Administration calls this "drilling productivity" and says it is showing no sign of slowing.

Lynn Westfall, the EIA's director of energy markets and financial analysis, points out that the rig count in South Texas' Eagle Ford Shale "has not changed since 2012, but the production per new well has doubled."

Innovation makes the difference. The federal government recently predicted that oil production would rise through 2019 and then flatten off. But a second scenario in the report assumed that extraction technology would continue to improve, leading crude output to rise through 2040, if not longer.

The recent history of oil wells productivity is similar to that of gas wells.

In 2003, Headington Oil drilled an experimental well into the Bakken Shale in Montana near the North Dakota border. Headington, a private Dallas-area company, pumped in 326,000 gallons of liquid and used 640,000 pounds of sand. The well produced 828 barrels a day in October 2003.

Pat Smith, Headington's chief operating officer, says his approach back then was "to frack the heck out of it."

Turns out he didn't know from big fracks. EOG Resources Corp. last year drilled a well in the Eagle Ford Shale, using 30 times as much liquid. It also used 14.2 million pounds of sand. The result: 2,748 barrels a day.

Headington sold its Montana properties to XTO Energy Inc., now part of Exxon MobilCorp. for \$1.8 billion in 2008. Founder Tim Headington took some of his earnings and bankrolled Hollywood movies, such as "Hugo" and "Rango."

Mr. Smith is still chasing oil and looking to drill in the Permian Basin. But first, he needs to get up to speed on modern fracking. "I have a big learning curve," he says

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