

**The Week That Was: 2012-12-22 (December 22, 2012)**  
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**The Science and Environmental Policy Project**

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**Quote of the Week:** *"Is this what science has become? I hope not. But it is what it will become, unless there is a concerted effort by leading scientists to aggressively separate science from policy. The late Philip Handler, former president of the National Academy of Sciences, said that "Scientists best serve public policy by living within the ethics of science, not those of politics. If the scientific community will not unfrock the charlatans, the public will not discern the difference-science and the nation will suffer." Personally, I don't worry about the nation. But I do worry about science."* Michael Crichton [H/t Gordon Fulks]

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**Number of the Week:** \$12 Billion, first year

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In 2013 we will face a large number of proposed EPA regulations that will do little for the environment but will certainly retard or even stop economic growth. For a (partial) listing see [http://www.americanthinker.com/2012/10/obamas\\_epa\\_plans\\_for\\_2013.html](http://www.americanthinker.com/2012/10/obamas_epa_plans_for_2013.html)

Our task for 2013 is to show that most of these regulations are destructive, unscientific, and unnecessary. For a more complete statement of goals please see [www.SEPP.org](http://www.SEPP.org).

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# SEASON'S GREETINGS

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**THIS WEEK:**

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

**Please Note: There will be no TWTW next week**

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**AR5:** The climate science news this week was dominated by commentary on the leaking by Alec Rawls of the physical science section and the summary of the Second Order Draft (SOD) of the Fifth Assessment Report (AR5) by the Intergovernmental Panel on Climate Change (IPCC). The summary is due out in 2013 with the actual report to follow in 2014. In criticizing the leak, the IPCC revealed it will consider scientific reports that are published, or scheduled for publication, as late as March 15, 2013. This brings to a question: why are the summary and scientific section written and circulated long before papers that may be included are written?

The most significant criticisms focused on two figures. One figure showed the failure of past predictions from models starting with the 1990 report (subsequently called projections) because the models have never been validated. According to calculations by Ira Glickstein, the First Assessment Report (AR1) showed a warming of 0.5 deg C by 2012, the second 0.3 deg C, the third 0.39, the fourth 0.37 while the actual is 0.12 to 0.16. For the third and fourth reports the warming rate in degrees per decade increased significantly. The failure of the models is a significant issue that needs to be addressed by the IPCC.

The second controversial figure is that the predicted concentrations of methane in the atmosphere are far above the measured concentrations. Usually, methane is incorrectly identified as the second most important greenhouse gas (GHG) behind carbon dioxide (CO<sub>2</sub>). The per unit greenhouse influence of methane is greater than that of CO<sub>2</sub>, but the total effect of methane, given its low concentration, is significantly less. Water vapor is by far the most important GHG, but largely ignored in the general climate science literature. (The EPA and the courts enforcing the EPA finding that GHG endanger human health and welfare, in general, ignore water vapor, the dominant GHG.)

The defenders of the IPCC have raised a number of issues, but the central issue remains: the predictions of the IPCC are failing. In the final release of AR5 will the IPCC ignore these failures and produce new studies purportedly showing that the failings are illusionary? The history of the IPCC ignoring science that contradicts its assertions (the hockey-stick is just one of many examples) indicates that more tricks may be in the making. Although the general press, which supports the IPCC, is largely ignoring the issue, least at this time, a greater proportion of the general public is being made aware that there is no consensus. Please see links under AR5.

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**Defending the IPCC:** One of the more clever defenses of the IPCC was brought out by Andrew Montford, who reported that two British pop-science heroes, Cox and Ince, defended the IPCC by asserting that nature is complex and the computer models are but approximations of nature. The computer models are the best the climate scientists can do, given the limitations of computing power. Further, an attack on the process is an attack on the scientific method. The first part of the defense is precisely what the so-called climate skeptics have asserted all along: the results of the models are highly uncertain and the IPCC has no scientific basis for declaring the great certainty it claims. The second part of the defense reverses the history: it is the skeptics that have called for rigorous adherence to the scientific method – something the IPCC has ignored. The quote of the week is an appropriate response. Please see link under Communicating Better to the Public – Exaggerate, or be Vague?

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**Empirical Evidence:** As discussed in past TWTWs, there is great uncertainty contained in the models because the role of aerosols (small droplets and fine solid particles suspended in the

atmosphere) is not clearly understood. According to the IPCC reports, aerosols have a strong cooling effect, but the range of error is significant. If the cooling effect of aerosols is weak, then the influence of GHG on temperatures, particularly carbon dioxide, is likely to be significantly weaker than as calculated in the models. The relationship is critical in calculating the sensitivity of the planet to increasing CO<sub>2</sub>. Since the models are significantly imprecise, the influence of the aerosols must be determined empirically, not in the models.

In an op-ed in the Wall Street Journal, Matt Ridley discusses this issue and other issues on uncertainty in IPCC reports. Of course, the op-ed is drawing strong criticism by the defenders of the IPCC. Please see Article # 1.

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**EPA Litigation:** On Thursday, by a 6 to 2 vote the US Circuit Court of Appeals for the District of Columbia (often called the second most important Federal court behind the US Supreme Court) rejected a petition to re-hear a decision by a panel of the court which ruled against those who appealed the EPA finding that GHG, particularly CO<sub>2</sub>, endanger human health and welfare, Endangerment Finding (EF). The decision was disappointing, but expected. The only avenue left is to petition the Supreme Court to hear the case. It would be surprising if the Supreme Court did so.

As stated in prior TWTWs, the EPA claimed in court the models are valid and there is a 90 to 99 percent certainty in the science, largely derived from the IPCC AR4. Already the EPA is advancing intensified regulations based on court protection of its EF. The economic consequences may become extremely harmful. A critical issue behind the court decision is that the Federal appeal courts will not permit challenges to science as promulgated by Federal agencies.

It is becoming increasingly apparent that the models and science contained in the EPA finding are faulty and contain significant uncertainty, yet EPA regulations are advancing. If the situation were not so serious, it would be amusing. There is a major flaw in Federal court procedures. By not permitting challenge to bureaucratic claims of science supporting their actions, the courts do not protect the citizens from politically ambitious government officials. The founding fathers of the nation would be stunned by how their system of checks and balances is being breached. Please see link under Litigation Issues

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**One More Against Wind:** Andrew Montford reported that economics Professor Gordon Hughes of the University of Edinburgh produced an additional study on wind power in the UK showing that in ten years there is a one-third reduction in output in the UK. This will, one, displease investors, and, two, reduce contributions to CO<sub>2</sub> targets

Also, the study reports the decline in Danish offshore wind is worse than UK onshore wind, the lifetime costs of wind are considerably greater than wind promoters and politicians claim, new sites perform worse than earlier sites, and large farms are worse than smaller farms

The study adds to the major problems with wind, as compared with traditional sources of reliable power. Wind power: 1) is capital intensive – major costs are up-front; 2) is erratic, requiring a dependable alternative when it fails (why not build a dependable alternative instead); 3) significantly increases infrastructure cost for the collection and balancing system (grid); 4) lowers the capital recapture of the dependable alternative, thereby jeopardizing its credit worthiness and

increasing its costs; and 5) has a short life, requiring significant replacement costs. Please see links under Questioning European Green.

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**Battle of Energy Experts:** Last week TWTW reported that the Exxon-Mobil report to 2040 predicted that natural gas will surpass coal as the second major energy source. The International Energy Agency has predicted that coal will surpass oil as the major energy source. Predictions are always open to challenge, except when made by the IPCC.

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**Number of the Week: \$12 Billion, first year.** That is the estimated cost of the proposal advanced to Congress by the US wind lobby, American Wind Energy Association (AWEA), for an extension of the wind production tax credit (PTC) to “save wind jobs.” In recent years AWEA has been very successful in lobbying Congress. Apparently this was too much for even many of its most adamant supporters in Congress. According to reports, the reaction was such that within 24 hours the head of the lobbying group left. Perhaps the wind lobby should have learned from the banking lobby about asking for too much. Please see link under Subsidies and Mandates Forever.

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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. Cooling Down the Fears of Climate Change**

Evidence points to a further rise of just 1°C by 2100. The net effect on the planet may actually be beneficial.

By Matt Ridley, WSJ, Dec 18, 2012

[http://online.wsj.com/article/SB10001424127887323981504578179291222227104.html?mod=WSJ\\_Opinion\\_LEADTop](http://online.wsj.com/article/SB10001424127887323981504578179291222227104.html?mod=WSJ_Opinion_LEADTop)

**2. Harvard Needs Remedial Energy Math**

Wind and solar power cannot possibly meet the world's growing need for more electricity.

By Robert Bryce, WSJ, Dec 16, 2012

[http://online.wsj.com/article/SB10001424127887324640104578161593492943144.html?mod=ITP\\_opinion\\_0](http://online.wsj.com/article/SB10001424127887324640104578161593492943144.html?mod=ITP_opinion_0)

**3. IEA Issues Gloomy Outlook for U.S. Coal Industry**

By Sarah Kent, WSJ, Dec 18, 2012

[http://online.wsj.com/article/SB10001424127887324407504578187231686200320.html?mod=WSJ\\_business\\_whatsNews](http://online.wsj.com/article/SB10001424127887324407504578187231686200320.html?mod=WSJ_business_whatsNews)

**4. EU Carbon Capture Funding Goes Unclaimed**

By Alessandro Torello, WSJ, Dec 8, 2012

[http://online.wsj.com/article/SB10001424127887324407504578187393050121484.html?mod=WSJ\\_business\\_whatsNews](http://online.wsj.com/article/SB10001424127887324407504578187393050121484.html?mod=WSJ_business_whatsNews)

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**NEWS YOU CAN USE:**

*Challenging the Orthodoxy*

### **El Niño-Southern Oscillation Myth 3: ENSO Has No Trend and Cannot Contribute to Long-Term Warming**

By Bob Tisdale, WUWT, Dec 20, 2012

<http://wattsupwiththat.com/2012/12/20/el-nino-southern-oscillation-myth-3-enso-has-no-trend-and-cannot-contribute-to-long-term-warming/>

*[SEPP Comment: Global temperatures rise with increasing frequencies of El Niños. Research demonstrating these events were ignored by the IPCC.]*

### **The UN's Global Warming Forecasts Are Performing Very, Very Badly**

By Patrick Michaels, Forbes, Dec 18, 2012

<http://www.forbes.com/sites/patrickmichaels/2012/12/18/the-uns-global-warming-forecasts-are-performing-very-very-badly/>

*[SEPP Comment: Will the IPCC chop the offending graph?]*

### **Warming climate unlikely to cause extinction of ancient Amazon trees**

By Staff Writers, London UK (SPX), Dec 17, 2012

[http://www.terraviva.com/reports/Warming\\_climate\\_unlikely\\_to\\_cause\\_extinction\\_of\\_ancient\\_Amazon\\_trees\\_study\\_finds\\_999.html](http://www.terraviva.com/reports/Warming_climate_unlikely_to_cause_extinction_of_ancient_Amazon_trees_study_finds_999.html)

Dick, C.W., Lewis, S.L., Maslin, M, Bermingham, E. (2012). Genetic evidence for warmth tolerance of Amazon tree species. Ecology & Evolution, Link to study, <http://onlinelibrary.wiley.com/doi/10.1002/ece3.441/full>

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

#### **Independent Evidence Confirms Global Warming in Instrument Record**

By Staff Writers, NOAA, No Date

<http://www.ncdc.noaa.gov/news/independent-evidence-confirms-global-warming-instrument-record>

Link to the paper is behind a paywall

*[SEPP Comment: Few doubt the world has warmed since the Little Ice Age. But why did NOAA stop there? Why not go back 10,000 years since the last major ice age?]*

### **The Climate Countdown**

By Michael Jacobs, Project Syndicate, Dec 18, 2012

<http://www.project-syndicate.org/commentary/the-doha-climate-negotiations-yield-another-deadline-by-michael-jacobs>

Although political leaders are not focused on climate change, a big international event can capture their attention, as the Copenhagen conference did. And next year, when the Intergovernmental Panel on Climate Change begins publishing its latest assessment of the scientific evidence, the prospect of runaway climate change is bound to mobilize civil society.

*[SEPP Comment: The author accepts the claims of the climate establishment and ignores the scientific data – the earth is ignoring climate models. That is, he ignores the scientific evidence.]*

### **'Electric grid will accelerate climate change in Sundarbans'**

By Staff Writers, ZEE News, India, Dec 16, 2012 [H/t GWPF]

[http://zeenews.india.com/news/eco-news/electric-grid-will-accelerate-climate-change-in-sundarbans\\_817028.html](http://zeenews.india.com/news/eco-news/electric-grid-will-accelerate-climate-change-in-sundarbans_817028.html)

*[SEPP Comment: Keep them without electricity.]*

### **Disaster map predicts bleak future for mammals**

By Staff Writers, London UK (SPX), Dec 18, 2012

[http://www.terraily.com/reports/Disaster\\_map\\_predicts\\_bleak\\_future\\_for\\_mammals\\_999.html](http://www.terraily.com/reports/Disaster_map_predicts_bleak_future_for_mammals_999.html)

### **Top Officials Meet at ONR as Arctic Changes Quicken**

By David Smalley, Office of Naval Research, Arlington, VA (SPX) Dec 18, 2012

[http://www.terraily.com/reports/Top\\_Officials\\_Meet\\_at\\_ONR\\_as\\_Arctic\\_Changes\\_Quicken\\_99.html](http://www.terraily.com/reports/Top_Officials_Meet_at_ONR_as_Arctic_Changes_Quicken_99.html)

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

#### **Calling People Global Warming Skeptics or Climate Change Deniers Merely Reveals the Attacker's Ignorance**

By Tim Ball, A Different Perspective, Dec 20, 2012

<http://drtimball.com/2012/calling-people-global-warming-skeptics-or-climate-change-deniers-merely-reveals-the-attackers-ignorance/>

### **Climate Science: Opinions, Baloney and Bloggers**

By David Whitehouse, GWPF, Dec 20, 2012

<http://www.thegwgf.org/climate-science-opinions-baloney-bloggers/>

*[SEPP Comment: In climate science, bloggers are performing what peer review is claimed to accomplish.]*

### **BBC Blasted Over Climate Change 'Bias'**

By Staff Writers, Express, UK, Dec 18, 2012 [H/t GWPF]

<http://www.express.co.uk/posts/view/365640/BBC-blasted-over-climate-change-bias->

### **NOAA Mixing Their Niños**

By Paul Homewood, WUWT, Dec 21, 2012

<http://wattsupwiththat.com/2012/12/21/noaa-mixing-their-ninos/>

*[SEPP Comment: Debunking NOAA's meaningless claim of the hottest La Niña on record.]*

### **Notes From Skull Island – why climate skeptics aren't 'well funded and well organized'**

By Roger Knights, WUWT, Dec 16, 2012

<http://wattsupwiththat.com/2012/12/16/notes-from-skull-island-why-skeptics-arent-well-funded-and-well-organized/>

### ***Questioning European Green***

#### **Wind-worn**

By Andrew Montford, Bishop Hill, Dec 20, 2012

<http://bishophill.squarespace.com/blog/2012/12/20/wind-worn.html>

Link to the report:

<http://www.ref.org.uk/attachments/article/281/ref%20pr%2019%2012%2012.pdf>

### **Germany faces multibillion-Euro grid bill**

By Staff Writers, WNN, Dec 12, 2012

[http://www.world-nuclear-news.org/EE-Germany\\_faces\\_multibillion-Euro\\_grid\\_bill-1212127.html](http://www.world-nuclear-news.org/EE-Germany_faces_multibillion-Euro_grid_bill-1212127.html)

### ***Questioning Green Elsewhere***

#### **Blowing in the wind**

Editorial, Washington Post, Dec 15, 2012

[http://www.washingtonpost.com/opinions/blowing-in-the-wind/2012/12/15/1aafe362-4620-11e2-8e70-e1993528222d\\_story.html](http://www.washingtonpost.com/opinions/blowing-in-the-wind/2012/12/15/1aafe362-4620-11e2-8e70-e1993528222d_story.html)

#### **Government by NGO**

By Walter Starck, Quadrant, Dec 18, 2012

<http://www.quadrant.org.au/blogs/doomed-planet/2012/12/government-by-ngo>

[SEPP Comment: When environmental zealots control.]

### ***Expanding the Orthodoxy***

#### **Banking Environment Initiative (BEI)**

By Staff Writers, Cambridge Programme for Sustainability Leadership,

<http://www.cpsl.cam.ac.uk/bei>

[SEPP Comment: *If there is money to be made, the bankers will line up.*]

### ***IPCC AR5***

#### **An animated analysis of the IPCC AR5 graph shows ‘IPCC analysis methodology and computer models are seriously flawed’**

By Ira Glickstein, WUWT, Dec 19, 2012

<http://wattsupwiththat.com/2012/12/19/an-animated-analysis-of-the-ipcc-ar5-graph-shows-ipcc-analysis-methodology-and-computer-models-are-seriously-flawed/>

#### **The Leaked AR5 Report and Global Temperature**

By David Whitehouse, GWPF, Dec 18, 2012

<http://www.thegwgf.org/leaked-ar5-report-global-temperature/model-projections/>

#### **Chilling climate-change news**

New leak shows predictions of planetary warming have been overstated

Editorial, Washington Times, Dec 18, 2012 [H/t WUWT]

<http://www.washingtontimes.com/news/2012/dec/18/chilling-climate-change-news/>

#### **Another example of clear failure of IPCC models to predict reality in the AR5 draft**

By Anthony Watts, WUWT, Dec 17, 2012

<http://wattsupwiththat.com/2012/12/17/another-example-of-clear-failure-of-ipcc-models-to-predict-reality-in-the-ar5-draft/>

#### **Unleashed: Monckton releases his AR5 reviewer comments**

By Jo Nova, Her Blog, Dec 18, 2012

<http://joannenova.com.au/2012/12/unleashed-monckton-releases-his-ar5-reviewer-comments/>

**Science Skeptical On AR5: “Temperature Stagnation Officially Confirmed By IPCC...Models/Projections Shaken”!**

By P Gosselin, No Tricks Zone, Dec 16, 2012

<http://notrickszone.com/2012/12/16/science-skeptical-ipcc-modelsprojections-shaken-temperature-stagnation-officially-confirmed-by-ipcc/>

[SEPP Comment: The German blog Science Skeptical should not be confused with the US warmist blog Skeptical Science.]

### **This Is Called Cheating (Part 1)**

By Donna Laframboise, NFC, Dec 20, 2012

<http://nofrackingconsensus.com/2012/12/20/this-is-called-cheating-part-1/>

### **Climate science freakout**

Leaked IPCC report sparks needed debate

By Terence Corcoran, Financial Post, Dec 21, 2012

<http://opinion.financialpost.com/2012/12/21/terence-corcoran-climate-science-freakout/>

[SEPP Comment: An ugly debate is better than a faked consensus.]

### **Climate Alarmism: The Beginning of the End?**

By Steven Hayward, Power Line, Dec 19, 2012

<http://www.powerlineblog.com/archives/2012/12/climate-alarmism-the-beginning-of-the-end.php>

### **Climate Change Draft Undermines U.N.'s Claims**

Editorial, IBD, Dec 19, 2012

<http://news.investors.com/ibd-editorials/121912-637709-ipcc-report-draft-bomshell-contradicts-speculation.htm>

### **Where's the Scare in the IPCC's Next Report?**

By Hilary Ostrov, The View From Here, Dec 16, 2012 [H/t GWPF]

<http://hro001.wordpress.com/2012/12/16/wheres-the-scare-in-ar5/>

### **IPCC Declares Its Intent to Circumvent Expert Reviewers**

Hundreds of souls have volunteered to serve as IPCC expert reviewers. But the review process lacks integrity – and the system is being gamed.

By Donna Laframboise, NFC, Dec 15, 2012

<http://nofrackingconsensus.com/2012/12/15/ipcc-declares-its-intent-to-circumvent-expert-reviewers/>

### **Alec Rawls responds to Steven Sherwood: “The professor is inverting the scientific method”**

By Jo Nova, Her Blog, Dec 16, 2012

<http://joannenova.com.au/2012/12/alec-rawls-responds-to-steven-sherwood-the-bad-professor-is-inverting-the-scientific-method/#more-26022>

[SEPP Comment: Rawls leaked the science section of IPCC AR5.]

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

#### **A Tale of Two Treaties**

By Bjørn Lomborg, Project Syndicate, Dec 17, 2012

<http://www.project-syndicate.org/commentary/climate-change-and-free-trade-in-doha-by-bj-rn-lomborg>

*[SEPP Comment: According to Lomborg, the coauthor of the incredible tract from the World Bank, which claimed a 4 deg C warming in as little as 50 years, was William Hare, a longtime climate policy director for Greenpeace.]*

### **Storms in the Machine**

By Aaron L. Gronstal, NASA, Nov, 2012

[http://www.giss.nasa.gov/research/features/201211\\_typhoons/](http://www.giss.nasa.gov/research/features/201211_typhoons/)

*[SEPP Comment: Modeling the impact of El Nino Southern Oscillation on the path of typhoons in the Pacific.]*

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

#### **Cox and Ince on the scientific method**

By Andrew Montford, Bishop Hill, Dec 19, 2012

<http://bishophill.squarespace.com/blog/2012/12/19/cox-and-ince-on-the-scientific-method.html>

### **Unfounded Fears? Mayan End of the World and climate catastrophe**

By Steve Gorham, Washington Time, Dec 18, 2012

<http://communities.washingtontimes.com/neighborhood/climatism-watching-climate-science/2012/dec/18/which-makes-more-sense-mayan-end-world-or-climate-/>

### **Pharisees and pieties at the ABC**

By Tony Thomas, Quadrant, Dec 20, 2012

<http://www.quadrant.org.au/blogs/doomed-planet/2012/12/pharisees-and-pieties-at-the-abc>

*[SEPP Comment: It is refreshing to learn that the Australian Broadcasting Corporation (ABC) no longer equates skeptics with pedophiles. Interestingly, ABC attacks BBC for misleading the public as to the global warming consensus.]*

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

#### **The Times of India's Misleading and Uninformed Report on the Supposed Health Impact of Climate Change**

By Indur Goklany, GWPF, Dec 21, 2012

<http://www.thegwgf.org/indur-m-goklany-times-indias-misleading-uninformed-report-supposed-health-impact-climate-change/>

### ***Models v. Observations***

#### **Models Behaving Badly**

By Robert Skidelsky, Project Syndicate, Dec 18, 2012

<http://www.project-syndicate.org/commentary/why-forecasts-of-economic-recovery-have-been-wrong-by-robert-skidelsky>

Before they can do any good, the forecasters must go back to the drawing board, and ask themselves whether the theories of the economy underpinning their models are the right ones.

*[SEPP Comment: Climate modelers need to do the same. It is doubtful either group will.]*

### **'Missing' polar weather systems could impact climate predictions**

By Staff Writers, Norwich UK (SPX), Dec 19, 2012

[http://www.terraily.com/reports/Missing\\_polar\\_weather\\_systems\\_could\\_impact\\_climate\\_predictions\\_999.html](http://www.terraily.com/reports/Missing_polar_weather_systems_could_impact_climate_predictions_999.html)

Link to paper: The impact of polar mesoscale storms on northeast Atlantic Ocean circulation.  
<http://www.nature.com/ngeo/journal/vaop/ncurrent/full/ngeo1661.html>

### **University of Tennessee study predicts extreme climate in Eastern US**

By Staff Writers, Knoxville TN (SPX), Dec 19, 2012

[http://www.terradaaily.com/reports/University\\_of\\_Tennessee\\_study\\_predicts\\_extreme\\_climate\\_in\\_Eastern\\_US\\_999.html](http://www.terradaaily.com/reports/University_of_Tennessee_study_predicts_extreme_climate_in_Eastern_US_999.html)

Link to paper: Projected changes of extreme weather events in the eastern United States based on a high resolution climate modeling system. <http://iopscience.iop.org/1748-9326/7/4/044025/>  
[SEPP Comment: Using the interval from 2001 to 2004 to predict climate from 2057 to 2059! The praised high resolution of the model is insignificant compared with the validity of the model.]

### **Most of Canada likely in for a green Christmas Day: Environment Canada**

By Linda Nguyen, Canadian Press, Dec 17, 2012 [H/t Gordon Fulks]

<http://www.canada.com/life/theholidayguide12/Most+Canada+likely+green+Christmas+Environment/7708538/story.html>

Satellite view of Canada on Dec 19, 2012 – it's snow!

<http://arctic.atmos.uiuc.edu/cryosphere/NEWIMAGES/arctic.seaice.color.004.png>

### ***Changing Weather***

#### **Cold Blast Claims Over 600 Lives Across Eastern Europe/Russia... "Death Toll Keeps Rising... State Of Emergency"**

By P. Gosselin, No Tricks Zone, Dec 21, 2012

<http://notrickszone.com/2012/12/21/cold-blast-claims-over-600-lives-across-eastern-europe/>

### ***Changing Earth***

#### **When the Ice Melts, the Earth Spews Fire**

By Staff Writers, Science Daily, Dec 19, 2012 [H/t WUWT]

<http://www.sciencedaily.com/releases/2012/12/121219133551.htm>

Link to the paper: A detection of Milankovitch frequencies in global volcanic activity,

<http://geology.gsapubs.org/content/early/2012/11/30/G33419.1>

[SEPP Comment: Volcanic activity increased 4,000 +/- 3,600 years after the ending of ice ages. It is logically facetious to apply the work to the miniscule amount of ice being lost today.]

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

#### **Farming the Sahara and the End of Malthusianism**

By Walter Russell Mead, Via Media, Dec 18, 2012 [H/t Timothy Wise]

<http://blogs.the-american-interest.com/wrm/2012/12/18/farming-the-sahara-and-the-end-of-malthusianism/>

### ***Review of Recent Scientific Articles by NIPCC***

***For a full list of articles see [www.NIPCCreport.org](http://www.NIPCCreport.org)***

#### **Health-Promoting Properties of Three Varieties of Kacip Fatimah**

Reference: Jaafar, H.Z.E., Ibrahim, M.H. and Karimi, E. 2012. Phenolics and flavonoids compounds, phenylalanine ammonia lyase and antioxidant activity responses to elevated CO<sub>2</sub> in *Labisia pumila* (Myrsinaceae). *Molecules* 17: 6331-6347.

<http://www.nipccreport.org/articles/2012/dec/18dec2012a1.html>

*[SEPP Comment: Under conditions of higher concentrations of CO<sub>2</sub> than the ambient atmosphere, the plants produce more phenolic acids and flavonoids, which many people believe are beneficial as being highly anti-inflammatory and anti-carcinogenic.]*

### **A Global Analysis of Historical Tropical Cyclone Landfalls**

Reference: Weinkle, J., Maue, R. and Pielke Jr., R. 2012. Historical global tropical cyclone landfalls. *Journal of Climate* 25: 4729-4735

<http://www.nipccreport.org/articles/2012/dec/18dec2012a2.html>

### **Paleofloods of the Mediterranean French Alps**

Reference: Wilhelm, B., Arnaud, F., Sabatier, P., Crouzet, C., Brisset, E., Chaumillon, E., Disnar, J.-R., Guitier, F., Malet, E., Reyss, J.-L., Tachikawa, K., Bard, E. and Delannoy, J.-J. 2012. 1400 years of extreme precipitation patterns over the Mediterranean French Alps and possible forcing mechanisms. *Quaternary Research* 78: 1-12.

<http://www.nipccreport.org/articles/2012/dec/19dec2012a1.html>

*[SEPP Comment: Intense flooding appears to be more frequent during the colder Little Ice Age than in the warmer Medieval Warm Period.]*

### **How Corals Can Overcome Ocean Acidification & Global Warming**

Reference: McCulloch, M., Falter, J., Trotter, J. and Montagna, P. Coral resilience to ocean acidification and global warming through pH up-regulation. *Nature Climate Change* 2: 623-627.

<http://www.nipccreport.org/articles/2012/dec/19dec2012a2.html>

“...during active calcification the pH of the calcifying fluid (pH<sub>cf</sub>) is often increased relative to ambient seawater pH.”

*[SEPP Comment: Even under projected high concentrations of atmospheric CO<sub>2</sub>, the pH remains above that of an acid.]*

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

#### **Obama: Climate change among top three priorities for second term**

By Zack Colman, The Hill, Dec 19, 2012

<http://thehill.com/blogs/e2-wire/e2-wire/273737-obama-climate-change-one-of-top-three-priorities>

### ***Litigation Issues***

#### **Court won't revisit greenhouse gas ruling**

By Zack Colman, The Hill, Dec 20, 2012

<http://thehill.com/blogs/e2-wire/e2-wire/274057-court-rejects-rehearing-on-epa-greenhouse-gas-emissions>

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

#### **California Cap-and-Trade Cronyism: James Hansen Weighs In**

By Robert Bradley Jr., Master Resource, Dec 21, 2012

<http://www.masterresource.org/2012/12/california-cap-trade-cronyism-hansen/#more-23404>

*[SEPP Comment: A review of the consistencies and inconsistencies of James Hansen.*

### ***Subsidies and Mandates Forever***

#### **AWEA: Stuck on Stupid (Bode bails wealth-destroying, rent-seeking racket)**

By Lisa Linowes, Master Resource, Dec 17, 2012

<http://www.masterresource.org/2012/12/awea-stuck-on-stupid-bode-bails-wealth-destroying-rent-seeking-racket/#more-23380>

### **Damning German Study Confirms Renewable Energy Feed-In Act Redistributes Wealth – From The Poor To The Rich!**

By P. Gosselin, No Tricks Zone, Dec 17, 2012

<http://notrickszone.com/2012/12/17/damning-german-study-confirms-renewable-energy-feed-in-act-redistributes-wealth-from-the-poor-to-the-rich/>

Link to the study: <http://www.iwkoeln.de/de/presse/veranstaltungen/beitrag/100078>

### **An Oil Company Finds Itself On the Losing End of Fossil Fuel Subsidies**

By Robert Rapier, Energy Tribune, Dec 17, 2012

<http://www.energytribune.com/68255/an-oil-company-finds-itself-on-the-losing-end-of-fossil-fuel-subsidies>

[SEPP Comment: What those who scream fossil fuel subsidies ignore.]

### **Study: Green-energy mandates will hit PA's poorest hardest**

By Eric Boehm, PA Independent, Dec 18, 2012 [H/t Timothy Wise]

<http://watchdog.org/64800/study-green-energy-mandates-will-hit-pas-poorest-hardest/>

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

#### **EPA finalizes boiler emissions rules**

By Zack Colman, The Hill, Dec 21, 2012

<http://thehill.com/blogs/e2-wire/e2-wire/274247-epa-finalizes-boiler-emissions-rules>

[SEPP Comment: Backed by statistically speculative health benefits.]

#### **EPA regulates water**

Life-giving substances shouldn't be treated as pollutants

Editorial, The Washington Times, Dec 17, 2012

<http://www.washingtontimes.com/news/2012/dec/17/epa-regulates-water/>

#### **EPA inspector general looking into alias email accounts**

By Tim Devaney, Washington Times, Dec 18, 2012

<http://www.washingtontimes.com/news/2012/dec/17/epa-inspector-general-looking-alias-email-accounts/>

#### **Transparency? EPA Under Investigation for Using 'Alias' Emails to Avoid FOIA Requests**

By Susan Jones, CNS News, Dec 18, 2012

<http://cnsnews.com/news/article/transparency-epa-under-investigation-using-alias-emails-avoid-foia-requests>

### ***Energy Issues – Non-US***

#### **The shale gas revolution: green taxes will mean sky-high prices for dirt-cheap energy**

The go-ahead for fracking should bring us falling energy bills, but instead we will see them soar

By Christopher Booker, Telegraph, UK, Dec 15, 2012

<http://www.telegraph.co.uk/comment/9746864/The-shale-gas-revolution-green-taxes-will-mean-sky-high-prices-for-dirt-cheap-energy.html>

### **Back from the brink of extinction**

By Dennis Avery, Canada Free Press, Dec 19, 2012

<http://www.canadafreepress.com/index.php/article/51888>

*[SEPP Comment: Environmental benefits of developing Canadian oil sands.]*

### **A Big, and Risky, Energy Bet**

By John Border and Clifford Krauss, NYT, Dec 17, 2012

[http://www.nytimes.com/2012/12/18/business/energy-environment/sasol-betting-big-on-gas-to-liquid-plant-in-us.html?nl=todaysheadlines&emc=edit\\_th\\_20121218&r=0](http://www.nytimes.com/2012/12/18/business/energy-environment/sasol-betting-big-on-gas-to-liquid-plant-in-us.html?nl=todaysheadlines&emc=edit_th_20121218&r=0)

*[SEPP Comment: Reforming natural gas into a liquid fuel similar to diesel.]*

### **EU Willing to Buy US Shale Gas**

By Marie-Martine Buckens, Europolitics, via GWPF, Dec 20, 2012

<http://www.thegwpf.org/eu-buy-shale-gas/>

*[SEPP Comment: With the condition that the exports not be restricted to NATO countries.]*

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

#### **U.S. oil prices could sink to \$50**

By Steve Hargreaves, CNN, Dec 11, 2012 [H/t GWPF]

<http://money.cnn.com/2012/12/11/news/economy/oil-prices/index.html>

*[SEPP Comment: Unlikely it would go as low as \$50 nation-wide. But such a low regional price would reflect on regulations preventing building the necessary infrastructure to transport oil in a timely manner. The Keystone pipeline delayed, or perhaps stopped, by Washington would have relieved some of the pressure to transport US oil.]*

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

**By Asjlynn Loder, Bloomberg, Dec 18, 2012**

<http://www.bloomberg.com/news/2012-12-19/american-oil-most-since-first-well-in-1859-signals-independence.html>

*[SEPP Comment: Please note the difference between crude oil and petroleum products, or fuel. The US is a major importer of crude oil, but an exporter of fuel.]*

### **Shale Boom Sparks a Chemical Revolution**

By Ed Crooks, Financial Times, via GWPF, Dec 17, 2012

<http://www.thegwpf.org/shale-boom-sparks-chemical-revolution/>

### **Can UAE-Backed Firm Shut Down U.S. Fracking Boom?**

Editorial, IBD, Dec 21, 2012

<http://news.investors.com/ibd-editorials/122112-638093-opeac-just-loves-anti-fracking-film-promised-land.htm>

### ***Washington's Control of Oil and Gas***

**Feds look other way as wind farms kill birds -- but haul oil and gas firms to court**

By Barnini Chakraborty, Fox News, Dec 17, 2012

<http://www.foxnews.com/politics/2012/12/17/us-wind-farms-under-fire-for-bird-kills/%20?test=latestnews#ixzz2FMkgiDdA>

### **Canada Leaps Past Dithering US in Energy Race**

By Walter Russell Mead, Via Meadia, Dec 17, 2012 [H/t Timothy Wise]

<http://blogs.the-american-interest.com/wrm/2012/12/17/us-vs-canada-in-the-energy-revolution/>

### **U.S. ruling on Keystone XL could be delayed again: report**

By Jeffrey Jones, Reuters, Dec 21, 2012

<http://business.financialpost.com/2012/12/21/u-s-ruling-on-keystone-xl-could-be-delayed-again-report/>

### **Interior urges 'safety culture' among offshore drillers**

By Ben Geman, The Hill, Dec 19, 2012

<http://thehill.com/blogs/e2-wire/e2-wire/273729-interior-to-demand-safety-culture-among-offshore-drillers>

*[SEPP Comment: Will its safety requirements regulate offshore drilling out of existence?]*

### **BLM Onshore Oil and Gas Lease Sales Garnered Millions for Taxpayers in 2012**

By Staff Writers, Washington DC (SPX), Dec 19, 2012

[http://www.energy-daily.com/reports/BLM Onshore Oil and Gas Lease Sales Garnered Millions for Taxpayers in 2012 999.html](http://www.energy-daily.com/reports/BLM%20Onshore%20Oil%20and%20Gas%20Lease%20Sales%20 Garnered%20Millions%20for%20Taxpayers%20in%202012%20999.html)

*[SEPP Comment: The recent increase in oil and gas production has been in spite of, not because of, the policies of the administration. Salazar, the head of the Department of Interior, has long opposed development of oil and gas on Federal lands and offshore. That he should brag about revenues demonstrates the extent of hypocrisy in the administration.]*

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

#### **Coal use set to surpass oil in a decade: IEA**

By Staff Writers, Paris (AFP), Dec 18, 2012

[http://www.energy-daily.com/reports/Coal use set to surpass oil in a decade IEA 999.html](http://www.energy-daily.com/reports/Coal%20use%20set%20to%20surpass%20oil%20in%20a%20decade%20IEA%20999.html)

### **Rise of the Machines & the Explosion of Data**

By Mark Mills, Energy Facts Weekly, Dec 18, 2012

<http://us1.campaign-archive1.com/?u=29bc7d5d85828d574f86c157a&id=519da86d90&e=>

*[SEPP Comment: Exxon-Mobil projected that natural gas will surpass coal as the second most important fuel by 2040. Mills stops the his projection at 2025.]*

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

#### **Fukushima Radiation**

By Donn Dears, Power for USA, Dec 21, 2012

<http://dddusmma.wordpress.com/2012/12/21/fukushima-radiation/>

*[SEPP Comment: More reason why the EPA linear no-threshold model, based on misleading nuclear radiation studies, is scientifically irresponsible.]*

### **Japanese party victory a boost for nuclear**

By Staff Writers, Tokyo (UPI), Dec 17, 2012

[http://www.nuclearpowerdaily.com/reports/Japanese\\_party\\_victory\\_a\\_boost\\_for\\_nuclear\\_999.html](http://www.nuclearpowerdaily.com/reports/Japanese_party_victory_a_boost_for_nuclear_999.html)

### **Three Chinese reactor projects underway**

By Staff Writers, WNN, Dec 13, 2012

[http://www.world-nuclear-news.org/NN-Three\\_Chinese\\_reactor\\_projects\\_underway-1312124.html](http://www.world-nuclear-news.org/NN-Three_Chinese_reactor_projects_underway-1312124.html)

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

#### **POWER’s Peltier: Show Your CO2 Hand or Fold, Windpower**

By Robert Bradley Jr, Master Resource, Dec 18, 2012

<http://www.masterresource.org/2012/12/peltier-wind-co2/#more-23349>

“Forgotten by many proponents is the justification for the PTC in the first place: to reduce CO2 emissions.... [Yet] ... many utilities with large amounts of wind generation steadfastly refuse to release operating data for analysis. I suspect to do so would mean the release of empirical data to build the opposition’s case for insignificant CO2 reduction and poor operating economics. I was unable to find one study of existing wind energy installations that found the CO2 reductions predicted by AWEA.”

#### **China says it will overhaul solar panel industry by forcing struggling producers to merge**

By Staff Writer, AP, Dec 19, 2012

[http://www.washingtonpost.com/business/technology/china-says-it-will-overhaul-solar-panel-industry-by-forcing-struggling-producers-to-merge/2012/12/19/0cbd823c-4a53-11e2-8af9-9b50cb4605a7\\_story.html](http://www.washingtonpost.com/business/technology/china-says-it-will-overhaul-solar-panel-industry-by-forcing-struggling-producers-to-merge/2012/12/19/0cbd823c-4a53-11e2-8af9-9b50cb4605a7_story.html)

*[SEPP Comment: Will this result in stabilization in the costs of panels, which proponents of solar have claimed will continue to fall dramatically for at least a decade?]*

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

#### **Forcing Ethanol Down American Throats**

By Donn Dears, Power for USA, Dec 18, 2012

<http://dddusmma.wordpress.com/2012/12/18/forcing-ethanol-down-american-throats/>

*[SEPP Comment: When politicians, regardless of party, allow environmental ideology to replace reason, the public suffers.]*

### ***Carbon Schemes***

#### **Australia unveils carbon capture plant**

By Staff Writers, Brisbane, Australia (UPI), Dec 18, 2012

[http://www.energy-daily.com/reports/Australia\\_unveils\\_carbon\\_capture\\_plant\\_999.html](http://www.energy-daily.com/reports/Australia_unveils_carbon_capture_plant_999.html)

### ***California Dreaming***

#### **California issues proposed rules for 'fracking'**

California Gov. Jerry Brown's administration proposes rules that would require more disclosure from oil companies in the state that employ hydraulic fracturing, also known as 'fracking.'

By Michael Mishak, LA Times, Dec 18, 2012

<http://www.latimes.com/news/nationworld/nation/la-me-fracking-20121219,0,5163638.story>

[SEPP Comment: Many drilling companies already disclose the chemicals used and the locations of the wells, and some states require disclosure. The major issue appears to be the detailed combinations or proportions.]

**Oh Mann!**

**CEI SLAPPS Back At Climate Scientist Michael Mann’s Libel Lawsuit**

Invokes DC’s Anti-SLAPP Act to Protect Free Speech

By Christine Hall, CEI, Dec 17, 2012

<http://cei.org/news-releases/cei-slapps-back-climate-scientist-michael-mann%E2%80%99s-libel-lawsuit>

**Other News that May Be of Interest**

Vaccines news, part 2: The return of thimerosal?

By Staff Writers, ACSH, Dec 17, 2012

<http://www.acsh.org/vaccines-news-part-2-the-return-of-thimerosal/>

[SEPP Comment: The dangers of misleading studies trumpeted by alarmists.]

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**BELOW THE BOTTOM LINE:**

**Do Heat Waves Cause Birth Defects?**

By William Briggs, His Blog, Dec 21, 2012 [H/t WUWT]

<http://wmbriggs.com/blog/?p=6870>

[SEPP Comment: More statistical nonsense.]

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**ARTICLES:**

**1. Cooling Down the Fears of Climate Change**

Evidence points to a further rise of just 1°C by 2100. The net effect on the planet may actually be beneficial.

By Matt Ridley, WSJ, Dec 18, 2012

<http://online.wsj.com/article/SB10001424127887323981504578179291222227104.html?mod=W>  
[SJ Opinion LEADTop](#)

Forget the Doha climate jamboree that ended earlier this month. The theological discussions in Qatar of the arcana of climate treaties are irrelevant. By far the most important debate about climate change is taking place among scientists, on the issue of climate sensitivity: How much warming will a doubling of atmospheric carbon dioxide actually produce? The Intergovernmental Panel on Climate Change has to pronounce its answer to this question in its Fifth Assessment Report next year.

The general public is not privy to the IPCC debate. But I have been speaking to somebody who understands the issues: Nic Lewis. A semiretired successful financier from Bath, England, with a strong mathematics and physics background, Mr. Lewis has made significant contributions to the subject of climate change.

He first collaborated with others to expose major statistical errors in a 2009 study of Antarctic temperatures. In 2011 he discovered that the IPCC had, by an unjustified statistical manipulation, altered the results of a key 2006 paper by Piers Forster of Reading University and Jonathan Gregory of the Met Office (the United Kingdom’s national weather service), to vastly increase the

small risk that the paper showed of climate sensitivity being high. Mr. Lewis also found that the IPCC had misreported the results of another study, leading to the IPCC issuing an Erratum in 2011.

Mr. Lewis tells me that the latest observational estimates of the effect of aerosols (such as sulfurous particles from coal smoke) find that they have much less cooling effect than thought when the last IPCC report was written. The rate at which the ocean is absorbing greenhouse-gas-induced warming is also now known to be fairly modest. In other words, the two excuses used to explain away the slow, mild warming we have actually experienced—culminating in a standstill in which global temperatures are no higher than they were 16 years ago—no longer work.

In short: We can now estimate, based on observations, how sensitive the temperature is to carbon dioxide. We do not need to rely heavily on unproven models. Comparing the trend in global temperature over the past 100-150 years with the change in "radiative forcing" (heating or cooling power) from carbon dioxide, aerosols and other sources, minus ocean heat uptake, can now give a good estimate of climate sensitivity.

The conclusion—taking the best observational estimates of the change in decadal-average global temperature between 1871-80 and 2002-11, and of the corresponding changes in forcing and ocean heat uptake—is this: A doubling of CO<sub>2</sub> will lead to a warming of 1.6°-1.7°C (2.9°-3.1°F).

This is much lower than the IPCC's current best estimate, 3°C (5.4°F).

Mr. Lewis is an expert reviewer of the recently leaked draft of the IPCC's WG1 Scientific Report. The IPCC forbids him to quote from it, but he is privy to all the observational best estimates and uncertainty ranges the draft report gives. What he has told me is dynamite.

Given what we know now, there is almost no way that the feared large temperature rise is going to happen. Mr. Lewis comments: "Taking the IPCC scenario that assumes a doubling of CO<sub>2</sub>, plus the equivalent of another 30% rise from other greenhouse gases by 2100, we are likely to experience a further rise of no more than 1°C."

A cumulative change of less than 2°C by the end of this century will do no net harm. It will actually do net good—that much the IPCC scientists have already agreed upon in the last IPCC report. Rainfall will increase slightly, growing seasons will lengthen, Greenland's ice cap will melt only very slowly, and so on.

Some of the best recent observationally based research also points to climate sensitivity being about 1.6°C for a doubling of CO<sub>2</sub>. An impressive study published this year by Magne Aldrin of the Norwegian Computing Center and colleagues gives a most-likely estimate of 1.6°C. Michael Ring and Michael Schlesinger of the University of Illinois, using the most trustworthy temperature record, also estimate 1.6°C.

The big question is this: Will the lead authors of the relevant chapter of the forthcoming IPCC scientific report acknowledge that the best observational evidence no longer supports the IPCC's existing 2°-4.5°C "likely" range for climate sensitivity? Unfortunately, this seems unlikely—given the organization's record of replacing evidence-based policy-making with policy-based

evidence-making, as well as the reluctance of academic scientists to accept that what they have been maintaining for many years is wrong.

How can there be such disagreement about climate sensitivity if the greenhouse properties of CO<sub>2</sub> are well established? Most people assume that the theory of dangerous global warming is built entirely on carbon dioxide. It is not.

There is little dispute among scientists about how much warming CO<sub>2</sub> alone can produce, all other things being equal: about 1.1°-1.2°C for a doubling from preindustrial levels. The way warming from CO<sub>2</sub> becomes really dangerous is through amplification by positive feedbacks—principally from water vapor and the clouds this vapor produces.

It goes like this: A little warming (from whatever cause) heats up the sea, which makes the air more humid—and water vapor itself is a greenhouse gas. The resulting model-simulated changes in clouds generally increase warming further, so the warming is doubled, trebled or more.

That assumption lies at the heart of every model used by the IPCC, but not even the most zealous climate scientist would claim that this trebling is an established fact. For a start, water vapor may not be increasing. A recent paper from Colorado State University concluded that "we can neither prove nor disprove a robust trend in the global water vapor data." And then, as one Nobel Prize-winning physicist with a senior role in combating climate change admitted to me the other day: "We don't even know the sign" of water vapor's effect—in other words, whether it speeds up or slows down a warming of the atmosphere.

Climate models are known to poorly simulate clouds, and given clouds' very strong effect on the climate system—some types cooling the Earth either by shading it or by transporting heat up and cold down in thunderstorms, and others warming the Earth by blocking outgoing radiation—it remains highly plausible that there is no net positive feedback from water vapor.

If this is indeed the case, then we would have seen about 0.6°C of warming so far, and our observational data would be pointing at about 1.2°C of warming for the end of the century. And this is, to repeat, roughly where we are.

The scientists at the IPCC next year have to choose whether they will admit—contrary to what complex, unverifiable computer models indicate—that the observational evidence now points toward lukewarm temperature change with no net harm. On behalf of all those poor people whose lives are being ruined by high food and energy prices caused by the diversion of corn to biofuel and the subsidizing of renewable energy driven by carboncrats and their crony-capitalist friends, one can only hope the scientists will do so.

*Mr. Ridley writes the Mind and Matter column in The Wall Street Journal and has written on climate issues for various publications for 25 years. His family leases land for coal mining in northern England, on a project that will cease in five years.*

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## **2. Harvard Needs Remedial Energy Math**

Wind and solar power cannot possibly meet the world's growing need for more electricity.

By Robert Bryce, WSJ, Dec 16, 2012

[http://online.wsj.com/article/SB10001424127887324640104578161593492943144.html?mod=IT\\_P\\_opinion\\_0](http://online.wsj.com/article/SB10001424127887324640104578161593492943144.html?mod=IT_P_opinion_0)

Investing in and using fossil fuels is so wrong it should be seen as the equivalent of support for apartheid. That is the message being promoted by 350.org, the organization headed by environmental activist Bill McKibben.

Over the past month or so, Mr. McKibben and a rotating cast of activists have held rallies in 21 U.S. cities encouraging students to campaign for ridding their university endowments of investments in coal, oil and natural gas. The effort is modeled on the 1980s effort to get universities to shed investments in companies that did business in apartheid-era South Africa. A few small schools, including Unity College in Maine and Hampshire College in Massachusetts, have responded to the pressure and agreed to rid their portfolios of fossil-fuel stocks.

One of the slogans used in 350.org's divestment campaign is "Do the math." OK. Let's.

Set aside the financial arguments for—or against—investing in companies that produce hydrocarbons. Further, let's not judge the claims made by Mr. McKibben and his allies that a concentration of 350 parts per million of carbon dioxide in the earth's atmosphere is "the safe limit for humanity."

Let's do the math by considering what will happen if we humans—in the words of the campaign—attempt to "go fossil free" and rely solely on "clean energy." To make the computation simpler still, let's ignore oil altogether, even though that energy source represents about 33% of all global energy use and is indispensable for transportation.

The absurdity of the calls for a "fossil free" future can be illustrated by looking exclusively at the explosive growth in the world's demand for electricity, the commodity that separates rich countries from the poor ones. Since 1985, on a percentage basis, global electricity demand has grown by 121%, which is nearly three times the rate of growth in oil demand. Over the past two and half decades, electricity consumption has increased by an average of 450 terawatt-hours (a terawatt-hour is one trillion watt-hours) per year. That's the equivalent of adding about one Brazil (which used 485 terawatt-hours of electricity in 2010) to the electricity sector every year. The International Energy Agency expects global electricity use to continue growing by about 450 terawatt-hours per year through 2035.

Here's where the math becomes college-freshman obvious: In 2011, the world had 240,000 megawatts of wind-generation capacity. That fleet of turbines produced 437 terawatt-hours of electricity. Therefore, just keeping up with the growth in global electricity demand—while not displacing any of the existing need for coal, oil and natural gas—would require the countries of the world to install about as much wind-generation capacity as now exists, and they'd have to do so every year.

Put another way, just to keep pace with demand growth, the wind industry will need to cover a land area of some 48,000 square miles with wind turbines per year, an area about the size of North Carolina. Even if that much land were available, no humans would want to live on the land because of the irritating noise generated by those turbines.

There are welcome developments in solar energy: Production is growing rapidly and the price of solar cells is falling. Once again, though, simple math exposes the scale problem.

Recall that we need 450 terawatt-hours per year of electricity production to keep pace with incremental demand. Germany has more installed solar-energy capacity than any other country—about 25,000 megawatts. Last year, Germany produced 19 terawatt-hours of electricity from solar. Thus, just to keep pace with the growth in global electricity demand, the world would have to install about 23 times as much solar-energy capacity as now exists in Germany, and it would have to do so year after year.

And we haven't even considered the incurable intermittency of solar and wind, a problem that requires backup capacity from fossil fuels or nuclear power.

Last month, the Harvard College Undergraduate Council held a referendum on fossil fuel divestment. (Harvard's \$31 billion endowment is the largest in the country.) With about half of the undergrads voting, 72% voted in favor of divesting. Those students were apparently persuaded by the slick slogans put out by 350.org, such as "We > fossil fuels."

Harvard is among America's most prestigious schools. But it is apparent that the students who voted in favor of the divestiture proposal—and presumably to rid the world of fossil fuels—didn't, ahem, do the math.

*Mr. Bryce is a senior fellow at the Manhattan Institute.*

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### **3. IEA Issues Gloomy Outlook for U.S. Coal Industry**

By Sarah Kent, WSJ, Dec 18, 2012

[http://online.wsj.com/article/SB10001424127887324407504578187231686200320.html?mod=WJ\\_SJ\\_business\\_whatsNews](http://online.wsj.com/article/SB10001424127887324407504578187231686200320.html?mod=WJ_SJ_business_whatsNews)

The U.S. coal industry faces a difficult period at home as shale gas reduces the fuel's share in power generation, but its problems are set to worsen as export markets diminish and large swaths of the industry could have to shut, the International Energy Agency warned on Tuesday.

U.S. coal consumption will fall by 14% between 2011 and 2017 as power stations burn increasing amounts of cheap shale gas, but the European export outlet that has helped sustain the industry through the early stages of this shift won't last as carbon-emissions regulations there tighten, the IEA said. The result is likely to be mine closures and job losses in some of the poorest U.S. regions, it said.

"If domestic coal demand remains sluggish and international coal prices low, large shares of coal production in the United States will eventually become unprofitable," said the Paris-based IEA, which advises rich industrialized countries on energy policy, in its medium-term coal market outlook.

The U.S. coal industry's woes are the flip side of a six-year boom in natural-gas production as companies have used new technologies to unlock vast reserves previously trapped in shale-rock

formations stretching from Texas to New York. The resulting fall in natural-gas prices has encouraged a shift away from coal in power generation, putting pressure on the world's second-largest coal industry.

Although coal remains the backbone of the power system in the U.S., natural gas increased its market share by almost 13 percentage points between 2005 and 2012. This year through August, natural gas has accounted for 30% of the electricity generated in the country, while coal provided 37% of U.S. electricity generation, according to the federal Energy Information Administration.

The U.S. coal industry has responded by increasing exports, primarily to Europe where recent low prices for permits to emit carbon dioxide and high prices for natural gas have made coal more attractive.

According to the IEA, U.S. seaborne coal exports increased by 31% in 2011 compared with 2010 to 97 million tons, the highest level in the last two decades.

But growth in European demand for coal is expected to be sluggish over the next five years as regulations governing the emissions of carbon dioxide from power stations get more stringent and renewable-energy production grows.

The trend is already apparent. German utility said Monday it had ceased commercial operations at a coal-fired power station in Kent in the southeastern U.K. in response to European Union legislation limiting carbon emissions.

Next year "will be a good year for U.S. coal exports, but then it will become more difficult for the coal to come to Europe," said Laszlo Varro, head of the gas, coal and power division at the IEA.

That is bad news for the U.S. coal industry. Estimates already peg production cuts at around 60 million tons this year, or around 6% of the country's coal production last year, the IEA said. By contrast, supply of natural gas is estimated to have increased by around a quarter between 2006 and 2011.

"Given sustained weak coal demand over the outlook period, parts of the coal industry in the United States will have to be restructured and consolidated in the coming years," the report said.

Closing 60 million tons a year of mining capacity in the second-largest U.S. mining region, Appalachia, might result in the loss of 9,000 to 15,000 direct mining jobs, the IEA said. The majority of mine consolidation would likely take place in West Virginia and Kentucky, among the 10 poorest states by gross domestic product per capita, it said.

Matthew Preston, a principal analyst with natural-resource consultancy Wood Mackenzie, said he expects U.S. coal consumption to hold up better than the IEA forecasts, fueled by an increase in natural-gas prices that will make coal more competitive. But he agrees with the IEA's assessment of tough times ahead for Appalachia, particularly the area that includes Kentucky, Virginia and West Virginia.

"Central Appalachia as a producer of thermal coal for electricity production is on the decline, and strongly so," Mr. Preston said. "It's not as if mining goes away completely, it's just going to be lower than it's been in the past."

Luke Popovich, a spokesman for the National Mining Association, an industry group that counts U.S. coal producers among its members, said the IEA's conclusions seemed consistent with the trend in Appalachia. Mining companies there, he said, were emphasizing metallurgical coal, used in steelmaking, as cheaper thermal, or power-plant coal, becomes unprofitable because of the shift in the U.S. market.

"Clearly there's been a trend of declining Appalachian share of U.S. production," Mr. Popovich said. "What we've seen is some consolidation in the industry to focus on the high-value met coal."

The IEA said it was likely many employees of the mining industry would be able to find new jobs. "Given that the U.S. economy is recovering and the shale-gas industry is looking for a lot of people with technical qualifications, you will probably see former coal miners finding employment in shale gas," said the group's Mr. Varro.

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#### **4. EU Carbon Capture Funding Goes Unclaimed**

By Alessandro Torello, WSJ, Dec 8, 2012

[http://online.wsj.com/article/SB10001424127887324407504578187393050121484.html?mod=W\\_SJ\\_business\\_whatsNews](http://online.wsj.com/article/SB10001424127887324407504578187393050121484.html?mod=W_SJ_business_whatsNews)

BRUSSELS—Hundreds of millions of euros in European Union funding for technology that could turn coal into a clean fuel remains unclaimed because neither companies nor governments were willing to match the EU funds, the European Commission said Tuesday.

The failure of the EU program to fund a single project illustrates how, after early hopes that it could become a key tool in the fight against climate change, the development of technology to capture and store the carbon dioxide emissions of power stations has lost momentum.

Low prices for permits to emit the gas in the EU have crippled any incentive to avoid those emissions by investing billions of euros in carbon capture and storage, or CCS. National governments were also supposed to back the program, but pressure on their budgets because of the European economic crisis has hindered the program.

The European Commission, the EU's executive arm, said Tuesday that the €275 million available in the first round of a funding program for CCS technology wasn't awarded because of uncertainties about private or national contributions that would have to match EU funding for the plan to proceed.

"We actually did get a number of good projects that could have been supported, but...it is critical that either the project sponsors and/or the host member states guarantee the other half [of the money] to avoid the funding gap and ensure that the project is viable," Connie Hedegaard, the EU Climate Change commissioner, said in a news conference. "Unfortunately, this did not happen for any of the eligible CCS projects."

Ms. Hedegaard said in some cases private sponsors withdrew their support, while in others there was no clear indication that governments would close the funding gap. The money would be offered at a second call for proposal next year, she said.

The U.K. government faced a similar problem earlier this year, when it had to relaunch its own competition for funding of a commercial-scale CCS project. The previous U.K. competition, launched in 2007, collapsed when participants balked at the high cost.

Despite these setbacks, many industry experts say CCS remains key to the EU's long-term carbon ambitions, because it is the only technology that would allow continued use of fossil fuels in producing electricity while meeting tough emissions-reduction targets.

It could become crucial if some countries such as Poland—that heavily rely on coal to produce electricity—want to abate their CO2 emissions without having to alter their energy mix. It may also have to play a greater role as countries such as Germany and France scale back zero-carbon nuclear power because of safety concerns.

CCS technology traps the CO2 emitted by a power plant, or any other heavy industrial installation, and sends it, usually through a pipeline, to underground reservoirs such as depleted oil fields. Its development raises several logistical challenges, such as how to capture the gas efficiently, and has provoked public opposition in places such as the Netherlands. It also needs huge upfront investments that can only be repaid if the carbon price is high enough.

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