The Week That Was: 2011-03-19 (March 19, 2011)
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The Science and Environmental Policy Project

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Quote of the Week:

Modern life requires learning from disasters, not fleeing all risk – Editorial, Wall Street Journal, March 14, 2011

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Number of the Week: Three to five percent as compared with ninety percent plus

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THIS WEEK:

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

The dominant news this week was the disastrous earthquake that hit northeastern Japan, the destructive tsunami, and the focus of the American popular press on the unfolding developments at damaged Japanese nuclear reactors while largely ignoring the tremendous human suffering. At last report, over 10,000 are dead or missing with the number expected to climb as search operations continue, the livelihood of tens of thousands destroyed, tens of thousands are without homes, basic sanitation, and power.

Yet to the American popular press, from "conservative" Bill O'Reilly to the "liberal" New York Times, the most pressing concern was the "threat" of a nuclear catastrophe – no matter how remote. As TWTW reader William Westmiller, who is experienced in radio and TV broadcasting, states: "in journalism if it bleeds it leads, but if it radiates it fascinates." Equally disappointing is that many journalists cited comments from anti-nuclear pressure groups while not bothering with comments from nuclear engineers and similar experts.

Though not all, many of the reports, pronouncements by anti-nuclear groups, and comments by politicians play on the scientific ignorance of the general population concerning nuclear energy. Although it is premature for a thorough analysis, a tentative review of what happened is useful for evaluating various reports and comments on modern nuclear power from uranium.

Number of the Week: Three to five percent as compared with ninety percent plus. In general, naturally occurring uranium is made up of about 0.7% of the U-235 isotope, with the balance of U-238 isotope. U-235 can support a fission chain reaction, but U-238 cannot. Most modern nuclear power plants use uranium oxide in which the percentage of U-235 has been increased to 3 to 5%. Uranium nuclear weapons require that the percentage of U-235 be about 90% or above. Very simply, the fuel used in a modern nuclear power plant cannot create a nuclear explosion, even if it is in the correct configuration and has an appropriate trigger.

All six of the reactors at the Fukushima Daiichi power plant are Generation II boiling water reactors of GE design. The oldest is about 40 years old. Unlike the Chernobyl reactor, these reactors have two strong features designed to contain any accident or mishap, in addition to the thick steel pressure vessel. The primary containment is a concrete and steel structure around the pressure vessel and the secondary containment thick poured concrete around the primary containment. A third structure is a thin shell designed to keep out weather.

In a nuclear plant, the heat from the nuclear reaction is used to create steam that drives turbines generating electricity. Rods made of neutron absorbing material, boron carbide at Fukushima, are placed

among the fuel rods to control the rate of the nuclear reaction and the amount heat given produced. The nuclear reaction is shut down by full insertion of these rods. However, the continuing radioactive decay of the products of the nuclear reaction in fuel rods still give off heat even after the reactor is shut down. For that reason the fuel assemblies must be immersed in water or some other coolant. If the coolant is lost, the fuel rods may reach temperatures so high they melt.

Adding to the difficulty, if the fuel rods are exposed to air / steam, the zirconium that coats the rods combines so strongly with oxygen, that it can strip oxygen from steam, forming free hydrogen. Hydrogen is so chemically reactive that it is not found in the atmosphere. It burns rapidly in the atmosphere, giving the impression of an explosion.

Three reactors were closed for maintenance and refueling, but contained fuel rods or fuel rods that were kept in storage pools. Retrospectively, a design flaw emerges: these cooling pools were built above the containment structures.

The US Geological Survey reports that the earthquake that struck Japan last Friday is the strongest ever recorded with modern instrumentation to hit Japan and the fourth strongest since 1900. The Richter scale used to measure earthquakes is a base ten logarithmic scale. Thus a 9 point earthquake is 10 times stronger than an 8 point earthquake. The strongest earthquake recorded, 9.5, hit Chile in 1960 (which also caused tsunami waves to hit Japan).

Northeastern Japan is in a geologic subduction zone where the oceanic plate is being forced into the earth's mantle which often results in severe earthquakes. Though not the only cause, these types of plate movements are the most common cause of tsunamis. By contrast, slip faults, where one plate is sliding against another, are not typically associated with significant tsunamis. One example is what is occurring in southern California where Los Angeles which is moving north relative to the continent.

Apparently, the earthquake destroyed the electric grid to which the nuclear plant is connected, but did not damage the plant. With the loss of the grid, the control rods were fully inserted into the fuel assemblies stopping the nuclear reactions in the active reactors. The backup diesel engines to generate emergency electrical power turned on providing the necessary circulation of water needed to keep the fuel rods from overheating.

About an hour later, the tsunami overwhelmed the sea wall damaging or destroying the diesel backup for the electricity to the pumps providing cooling water. A second backup of batteries may or may not have worked, but if they did the batteries were quickly drained. The cooling water overheated into steam and some of the fuel rods likely melted. The reaction between the hot fuel rods and the steam probably created hydrogen within the containment chambers.

When plant workers opened valves to release pressure from the chambers, the hydrogen escaped which burned so rapidly in the atmosphere that it virtually exploded. This resulted in damage to the outer shells, so displayed in photographs, but immaterial to the structural strength of the two containment structures. How the burning of the hydrogen gas affected the cooling pools on top of the containment structures is not clear. With the release of pressure, some radioactive gas escaped into the atmosphere.

The earthquake and tsunami effectively destroyed regular communications between plant operators and the corporate and government leaders. This probably delayed the decision to flood the overheating reactors with sea water which would effectively destroy them for further use.

What appears to be the most prolonged problem were the pools used for cooling the fuel assemblies. While the conditions in the reactors were being brought under control it appears that water in some of the

pools overheated and evaporated or boiled off. The fuel rod assemblies may have exposed to air / steam resulting in the release of hydrogen and radioactive gases. This may have caused the spike in radioactive readings latter in the week.

As of this writing, the latest reports are that the reactors are cautiously under control and that the temperatures of the cooling pools are being stabilized. Much of the instrumentation failed, but, based on theory, it appears that a few percent of each active reactor cores had damage.

Although not confirmed, if the above fairly reflects what took place, then it can be a basis to evaluate some of the more excited claims in the press and by anti-nuclear groups and politicians.

1) The reactors withstood the earthquake significantly above designed strength.
2) Although the primary source of electricity failed, initially the backup systems worked as required.
3) The reactors withstood the tsunami which was above planned height.
4) The tsunami disabled the diesel generated backup of electricity and the battery backup was either disabled or inadequate.
5) The destruction of the standard communications between the plant operators and corporate and national leaders lead to a slow decision to flood the active reactors with sea water, which destroyed them.
6) The observed "explosions" were chemical, probably burning of free hydrogen.
7) Some meltdown of active reactors probably occurred.
8) Some of the cooling pools overheated, probably exposing the fuel rods and giving off hydrogen and radioactive gases.
9) Thus far, except for the immediate area around the reactors, the radioactivity released has been insignificant.

From this natural disaster, we can learn that properly built nuclear plants can withstand powerful earthquakes and tsunamis. But backup cooling systems and any on-site cooling pools must be protected from any after effects of an earthquake. Cooling pools should be separated from the reactors. Also, solid communications must be available in spite of scope of the natural disaster.

The US Department of Energy categories the evolving nuclear power plant technology by generation. The plant Fukushima plant had Generation II reactors that require active safety features such manually opening valves and electricity to run cooling pumps. Among other features, Generation III reactors have passive safety systems that do not require manual effort or electricity to run cooling pumps. The Westinghouse AP 1000, is one such example: "designed to achieve and maintain safe shutdown condition without any operator action and without the need for ac power or pumps. Instead of relying on active components, such as diesel generators and pumps, the AP1000 relies on the natural forces of gravity, natural circulation, and compressed gases to keep the core and containment from overheating." [http://www.ap1000.westinghousenuclear.com/ap1000_safety.html]

As expected, many anti-nuclear groups and politicians are making much of the natural disaster to include calling for stopping the approval process of Generation III reactors.

In light of this tragedy, it is prudent that nations address the safety of their nuclear power plants. However, the anti-nuclear groups are so adamant in their opposition to this reliable source of electricity, that they oppose new nuclear plants that address the design flaws of plants built 40 years ago.
(Please see Articles # 1, 2, 3, & 4 and articles referenced under "Calming the Fears of Nuclear Energy," "Fanning the Fears of Nuclear Energy" and "Responses and Issues Remaining."
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The battles in the US Congress continue on restraining the EPA regulation of greenhouse gases. As expected, those who believe that such policy is the proper function of the legislature, not the administration or a government agency, are being labeled as anti-science. Those who flaunt such labels continue to assert "the science is settled" and ignore the separation of powers in the US Constitution. Please see articles under "Defending the Orthodoxy."

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Global warming alarmists and carbon dioxide control advocates continue to emphasize that their science is right and the only thing they need to do is communicate better with the public. Bob Carter gives specific examples of what communicating better with the public entails in Australia. Please see Article # 5.

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TWTW Correction: Last week TWTW referenced a finding by the Virginia Supreme Court on the litigation between Virginia Attorney General Cuccinelli and the University of Virginia regarding Michael Mann. The ever alert Chris Horner, a senior fellow of the Competitive Enterprise Institute, informed SEPP that it incorrectly interpreted the finding.

"The VA Supremes merely agreed to hear the enumerated issues. No rulings were issued. For a discussion of the 'person' issue, see the briefs in Albemarle County Circuit Court, *Rector and Visitors v Cuccinelli*. I attended oral argument and it was clear that even Judge Peatross, who otherwise was sympathetic to a fault with most of what the University argued -- which sympathies are now going to be heard by VASC -- was visibly unimpressed by the University's efforts on that latter issue." TWTW stands ably corrected. Please see article referenced under "Oh Mann!"

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ARTICLES:

For the numbered articles below please see: **www.sepp.org**.

1. Nuclear Overreactions

Modern life requires learning from disasters, not fleeing all risk
Editorial, WSJ, Mar 14, 2011 [H/t Ted Rockwell]
http://online.wsj.com/article/SB10001424052748704893604576198723013907008.html?mod=djemEditorialPage_t

2. Anti Nuke Agenda Clouds Real Japanese Health Threat

By Susan Ingber, ASCH Dispatch, Mar 14, 2011
No URL

3. Risk-Free Energy: Surely, You Must Be Joking

By Alex Berezow, Real Clear Politics, Mar 15, 2011
http://www.realclearscience.com/articles/2011/03/15/risk-free_energy_surely_you_must_be_joking_106232.html

4. After the Quake, Japan Says 'Never Give Up'

'Fukutsu no seishin' is a common exhortation in Japanese culture. Never has this spirit been more important.
By Howard Stringer, WSJ, Mar 18, 2011
http://online.wsj.com/article/SB10001424052748703818204576206230110017092.html?mod=WSJ_Opinion_LEFTTopOpinion

5. Global warming: 10 little facts

Control the language, and you control the outcome of any debate
By Bob Carter, Quadrant, AU, Mar 14, 2011

http://www.quadrant.org.au/blogs/doomed-planet/2011/03/bob-carter

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NEWS YOU CAN USE:

Climategate Continued

Hiding the Decline: Sciencemag
By Steve McIntyre, Climate Audit, Mar 17, 2011
http://climateaudit.org/2011/03/17/hide-the-decline-sciencemag/#more-13285

Way back when climate scientists were scientists: Chapter 8, FAR, circa 1990
By Jo Nova, Mar 19, 2011
http://joannenova.com.au/2011/03/way-back-when-climate-scientists-were-scientists-chapter-8-far/

["You'll find this hard to believe but I get excited about the 1990 First Assessment Report (FAR). It's very *different from wading through the later ones, because it's remarkably honest, and things are not hidden in double-speak (well, not so much). Scientists behave like scientists and talk of null hypothesis, and even of validating models. Indeed they had a whole chapter back then called "validation". How times have changed."]*

Peer into the Heart of the IPCC, Find Greenpeace
By Donna Laframboise, No Frakking Consensus, Mar 14, 2011
http://nofrakkingconsensus.wordpress.com/2011/03/14/peer-into-the-heart-of-the-ipcc-find-greenpeace/

Challenging the Orthodoxy

Ten Major Failures of Consensus Science
By Joseph D'Aleo, ICECAP, Mar 13, 2011
http://www.icecap.us/

The Warmist Cult
By Andrew Thomas, American Thinker, Mar 18, 2011
http://www.americanthinker.com/2011/03/the_warmist_cult.html
[SEPP Comment: The cited $78 Billion spent by Japan for global warming research could not be confirmed. The base article cited that amount was spent for biomass research.]

Ice, Ice, Maybe
By David Whiehouse, GWPF, Mar 10, 2011
http://www.thegwpf.org/the-observatory/2615-ice-ice-maybe.html

Defenders of the Orthodoxy

Into ignorance
Editorial, Nature, Mar 16, 2011
http://www.nature.com/nature/journal/v471/n7338/full/471265b.html?WT.ec_id=NATURE-20110317
[SEPP Comment: Nature Magazine does not comprehend the issue before Congress now is not the questionable science behind global warming but that EPA should not have the power to set public policy.]

Markey Takes A Stand for Science (and Sarcasm)
By Steve Benen, Washington Monthly, Mar 11, 2011
http://www.washingtonmonthly.com/archives/individual/2011_03/028399.php
[SEEP Comment: EPA science in unequivocal and all must obey.]

Let the Games Begin

H.R. 910 Seizing the Moral High Ground (How to Foil Opponents' Rhetorical Tricks)
By Marlo Lewis, Global Warming, Mar 16, 2011
http://www.globalwarming.org/2011/03/16/battle-over-h-r-910-part-ii-full-committee-approves-34-19/

Here's the simple but arduous way to get rid of ruinous regulations
By Ron Arnold, Washington Examiner, Mar 17, 2011
http://washingtonexaminer.com/opinion/columnists/2011/03/ron-arnold-heres-simple-arduous-way-get-rid-ruinous-regulations
[SEPP Comment: Should agencies benefiting from increased regulation (by increased power) be the arbitrators of the science suggesting the need for such regulation?]

EPA and other Regulators on the March

E.P.A. Proposes New Emission Standards for Power Plants
By John Broder and John Rudolf, NYT, Mar 16, 2011
http://www.nytimes.com/2011/03/17/science/earth/17epa.html?_r=1&hpw

EPA's Proposed "Toxic Air" Rules could Cost Sector $10.9B a Year
By Staff Writers, Power News, Mar 16, 2011
http://www.powermag.com/POWERnews/3527.html?hq_e=el&hq_m=2162991&hq_l=4&hq_v=5e660500d0

More Obama energy moves the will cripple the economy
By Diana Furchtgott-Roth, Washington Examiner, Mar 17, 2011
http://washingtonexaminer.com/opinion/columnists/2011/03/more-obama-energy-moves-will-cripple-economy

Green Injustice: How Obama's environmental policies hurt the poor,
By Niger Innis, Washington Examiner, Mar 14, 2011
http://washingtonexaminer.com/opinion/op-eds/2011/03/green-injustice-how-obamas-environmental-policies-hurt-poor

How Washington Ruined Your Washing Machine
By Sam Kazman, WJS, Mar 17, 2011
http://online.wsj.com/article/SB10001424052748704662604576202212717670514.html?mod=djemEditorialPage_h
[SEPP Comment: May be behind a pay wall.]

Litigation Issues

Federal Judge Dismisses Coal facility NSR Lawsuit
By Staff Writers, Power News, Mar 16, 2011
http://www.powermag.com/POWERnews/3528.html?hq_e=el&hq_m=2162991&hq_l=10&hq_v=5e660500d0

Two states bail out of global warming lawsuit
By Russell Cook, American Thinker, Mar 15, 2011
http://www.americanthinker.com/blog/2011/03/two_states_bail_out_of_global.html

N.J. quits emissions lawsuit
The multistate action, at the Supreme Court, calls for five utilities to cut greenhouse gases.

By Bruce Shipkowski, AP, Mar 13, 2011 [H/t Russell Cook]
http://www.philly.com/philly/news/new_jersey/117872439.html

Subsidies and Mandates Forever

Brussels sets emissions targets for airlines
By Andrew Willis, Euobserver, Mar 7, 2011
http://euobserver.com/885/31936/?rk=1

What's the catch with NOAA's catch-shares program?
By Iain Murray and Dennis Grabowski, Washington Examiner, Mar 12, 2011
http://washingtonexaminer.com/opinion/op-eds/2011/03/whats-catch-noaas-catch-shares-program

Energy Issues

Welcome to the Third World – Develop American energy – or say good-bye to jobs, revenue and modern living standards
By Paul Driessen, WMI Central, Mar 15, 2011 [H/t Tom Sheahen]
http://www.wmicentral.com/opinion/editorials/welcome-to-the-third-world-develop-american-energy-or-say/article_888b7af0-5026-11e0-9f0c-001cc4c03286.html

Obama's energy policies are crippling economic recovery
By Joseph Mason, Washington Examiner, Mar 16, 2011
http://washingtonexaminer.com/opinion/op-eds/2011/03/obamas-energy-policies-are-crippling-economic-recovery

Calming Fears of Nuclear Energy

Too soon to write off nuclear power
Editorial, Washington Post, Mar 16, 2011 [H/t David Manuta]
http://www.washingtonpost.com/opinions/too-soon-to-write-off-nuclear-power/2011/03/16/ABZ64Eh_story.html?wpisrc=emailtoafriend

Now it's 'The Japan Syndrome'
By Cal Thomas, Washington Examiner, Mar 16, 2011
http://washingtonexaminer.com/opinion/columnists/2011/03/now-its-japan-syndrome

A Meltdown of Fearmongers
Editorial, IBD, Mar 15, 2011
http://www.investors.com/NewsAndAnalysis/Article/566089/201103151907/A-Meltdown-Of-Fearmongers.htm

Fanning Fears of Nuclear Energy

Senate Democrats call for broad review of nation's nuclear reactors
By Andrew Restuccia, The Hill, Mar 16, 2011
http://thehill.com/blogs/e2-wire/677-e2-wire/150265-senate-dems-pressure-top-official-on-nuclear-safety

Japan Faces Potential Nuclear Disaster as Radiation Levels Rise
By Hiroko Tabuchi, David Sanger, and Keith Bradshere, NYT, Mar 14, 2011
http://www.nytimes.com/2011/03/15/world/asia/15nuclear.html?_r=1&nl=todaysheadlines&emc=tha2

U.S. Calls Radiation 'Extremely High;' Sees Japan Nuclear Crisis Worsening
By David Sanger, Matthew Wald, and Hiroko Tabuchi, NYT, Mar 16, 2011

http://www.nytimes.com/2011/03/17/world/asia/17nuclear.html?nl=todaysheadlines&emc=tha2

With U.S. Nuclear Plants Under Scrutiny, Too, a Report Raises Safety Concerns
By Tom Zeller, NYT, Mar 17, 2011
http://www.nytimes.com/2011/03/18/science/earth/18scientists.html?nl=todaysheadlines&emc=tha22

Dearth of Candor From Japan's Leadership
Hiroko Tabuchi, Ken Belson and Norimitsu, NYT, March 16, 2011
http://www.nytimes.com/2011/03/17/world/asia/17tokyo.html?nl=todaysheadlines&emc=tha2

Fallout: Japan's Reactor Crisis Awakens U.S. misgivings
By David Paul Kuhn, Real Clear Politics, Mar 17, 2011
http://www.realclearpolitics.com/articles/2011/03/17/fallout_japans_nuke_crisis_awakens_us_misgivings_109258.html

Inviting a nuclear emergency
By Eugene Robinson, Washington Post, Mar 17, 2011 [H/t David Manuta]
http://www.washingtonpost.com/opinions/inviting-a-nuclear-emergency/2011/03/17/ABDFjqm_story.html?wpisrc=emailtoafriend

Greater Danger Lies in Spent Fuel Than in Reactors
By Keith Bradshere and Hiroko Tabuchi, NYT, Mar 17, 2011
http://www.nytimes.com/2011/03/18/world/asia/18spent.html?nl=todaysheadlines&emc=tha22

Swedish firm applies to bury nuclear waste amid protests
By Staff Writers, AFP, Mar 16, 2011 [H/t Toshio Fujita]
http://www.google.com/hostednews/afp/article/ALeqM5j5eiOr65FGHok4aH6TRB8k1qq8_w?docId=CNG.550fae6775f2830eac7f20dd503f13fa.2d1
[SEPP Comment: 25 protesters!]

Responses and Issues Remaining

Japan's Saving Grace Its People
Editorial, IBD, Mar 14, 2011
http://www.investors.com/NewsAndAnalysis/Article/565958/201103141931/A-Saving-Grace.htm

China Halts Plant Approvals in New Nod to Safety Issues
By James Areddy and Brian Spegele, WSJ, Mar 17, 2011
http://online.wsj.com/article/SB10001424052748703899704576204110852886104.html?mod=ITP_pageone_3
[SEPP Comment: China is currently building Generation III nuclear plants. May be behind a paywall.]

Emerging Economies Move Ahead With Nuclear Plans
By Heather Timmons and Vikas Bajaj, NYT, Mar 14, 2011
http://www.nytimes.com/2011/03/15/business/energy-environment/15power.html?nl=todaysheadlines&emc=tha25

Chernobyl Study Says Health Risks Linger
By Gardnier Harris, NYT, Mar 17, 20112
http://www.nytimes.com/2011/03/18/health/research/18cancer.html?ref=science

Oil and Natural Gas – the Future or the Past?

They're Not Serious
Editorial, IBD, Mar 17, 2011
http://www.investors.com/NewsAndAnalysis/Article/566445/201103171851/Theyre-Not-Serious.htm

Big Oil loves it when Obama puts federal lands off-limits (But Big Oil isn't really who you think it is)
By Mark Tapscott, Washington Examiner, Mar 16, 2011
http://washingtonexaminer.com/blogs/beltway-confidential/2011/03/big-oil-loves-it-when-obama-puts-federal-lands-limits-big-oil-isn

New method extracts oil from tar sands
By Staff Writers, March 16, 2011 [H/t Toshio Fujita]
http://www.upi.com/Science_News/2011/03/16/New-method-extracts-oil-from-tar-sands/UPI-38861300307329/

Solving US Energy Problems
By Seldon B. Graham, American Thinker, Mar 15, 2011
http://www.americanthinker.com/2011/03/solving_us_energy_problems.html

The upside of high oil prices
Market forces will generate alternatives – if the feds don't intervene
By Mackubin Thomas Owens, Washington Times, Mar 15, 2011 [H/t Deke Forbes]
http://www.washingtontimes.com/news/2011/mar/15/the-upside-of-high-oil-prices/

BP Oil Spill and Administration Control of Drilling

We Need Less Talk and More Action on Gulf Coast Drilling
By Jim Adams, Real Clear Politics, Mar 11, 2011
http://www.realclearpolitics.com/articles/2011/03/11/we_need_less_talk_and_more_action_on_gulf_coast_drilling_109201.html

Third deepwater drilling permit OK'd
By Ben Geman, The Hill, Mar 18, 2011
http://thehill.com/blogs/e2-wire/677-e2-wire/150763-interior-approves-third-deepwater-drilling-permit

Obama: US oil production growth shows policies are working
By Nick Snow, Oil & Gas Journal, Mar 11, 2011 [H/t James Rust]
http://www.ogj.com/index/article-display/2543897789/articles/oil-gas-journal/general-interest-2/government/20100/march-2011/obama_-us_oil_production.html

Obama Comes Up Short On Oil
Editorial, IBD, Mar 11, 2011
http://www.investors.com/NewsAndAnalysis/Article/565809/201103111903/Editorial-Obama-Comes-Up-Short-On-Oil-.aspx

Alternative, Green Energy

Soaking up green
Editorial, Las Vegas Review-Journal, Mar 10, 2011 [H/t Real Clear Politics]
http://www.lvrj.com/opinion/soaking-up-green-117724223.html

Renewable Energy Delusions: Getting A Real Grip On Alternatives
By Larry Bell, Forbes, Mar 15, 2011 [H/t ICECAP]
http://blogs.forbes.com/larrybell/2011/03/15/renewable-energy-delusions-getting-a-real-grip-on-alternatives/

No windfall in false promise of green jobs
By Bjorn Lomborg, The Australian, Mar 2, 2011 [H/t Jo Nova]
http://www.theaustralian.com.au/news/opinion/no-windfall-in-false-promise-of-green-jobs/story-e6frg6zo-1226014388051

Questioning the European Green
Greening Europe? What a good idea!
By Alex Warleigh-Lack, Euobserver, Mar 9, 2011
http://euobserver.com/885/31883/?rk=1

Is Environmentalism Really Working?
Der Spiegel, Mar 17, 2011 [H/t Eric Gottshall]
http://www.spiegel.de/international/germany/0,1518,751469,00.html
[SEPP Comment: One of a series of 7 parts.]

Oh Mann!
Cuccinelli and UVA headed to Supreme Court over Mann's eamails
By Norman Leahy, Washington Examiner, Mar 11, 2011
http://washingtonexaminer.com/blogs/local-opinion-zone/2011/03/cuccinelli-and-uva-headed-supreme-court-over-manns-emails

Review of Recent Scientific Articles by NIPCC
For a full list of articles see www.NIPCCreport.org
Aerosol Radiative Forcing of Climate
Reference: Haerter, J.O., Roeckner, E., Tomassini, L. and von Storch, J.-S. 2009. Parametric uncertainty effects on aerosol radiative forcing. Geophysical Research Letters 36: 10.1029/2009GL039050.
http://www.nipccreport.org/articles/2011/mar/15mar2011a2.html

Alpine Flora Dynamics in a Warmer World
Reference: Kullman, L. 2010a. Alpine flora dynamics -- a critical review of responses to climate change in the Swedish Scandes since the early 1950s. *Nordic Journal of Botany* **28**: 398-408.
http://www.nipccreport.org/articles/2011/mar/15mar2011a1.html

High-Arctic Wet-Sedge Tundra Response to Regional Warming
Reference: Hill, G.B. ad Henry, G.H.R. 2011. Responses of High Arctic wet sedge tundra to climate warming since 1980. *Global Change Biology* **17**: 276-287.
http://www.nipccreport.org/articles/2011/mar/16mar2011a2.html

Advances and Retreats of Alaska's Tebenkof Glacier
Reference: Barclay, D.J., Wiles, G.C. and Calkin, P.E. 2009. Tree-ring crossdates for a first millennium AD advance of Tebenkof Glacier, southern Alaska.Quaternary Research 71: 22-26.
http://www.nipccreport.org/articles/2011/mar/16mar2011a5.html

The Changing Climate
Volcanism Caused by Global Warming

World Climate Report, Mar 14, 2011
http://www.worldclimatereport.com/index.php/2011/03/14/volcanism-caused-by-global-warming/#more-479

Other Scientific News

Arctic-Wide Measurements Verify rapid Ozone Depletion In Recent Days
By Staff Writer, SPX, Mar 15, 2011 [H/t Toshio Fujita]
http://www.terradaily.com/reports/Arctic_Wide_Measurements_Verify_Rapid_Ozone_Depletion_In_Recent_Days_999.html

NASA Spacecraft Circling Mercury
By Staff Writers, AP, Mar 17, 2011
http://www.nytimes.com/aponline/2011/03/17/science/AP-US-SCI-Mercury.html?ref=science

Other News that May Be Of Interest

Three volcanoes erupt almost at the same time after Japan Earthquake
Weather space.com Mar 11, 2011 [H/t Catherine French]
http://www.theweatherspace.com/news/TWS-3_11_2011_threevolcano.html

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BELOW THE BOTTOM LINE:

A link between Japan's earthquake and global warming?
By Stephen Stromberg, Washington Post, Mar 13, 2011 [H/t David Manuta]
http://www.washingtonpost.com/blogs/post-partisan/post/a-link-between-japans-earthquake-and-global-warming/2011/03/04/ABA2fGS_blog.html?referrer=emaillink

If the Japanese can't build a safe reactor, who can?
By Anne Applebaum, Washington Post, Mar 14, 2011
http://www.washingtonpost.com/opinions/if-the-japanese-cant-build-a-safe-reactor-who-can/2011/03/14/ABCJvuV_story.html?wpisrc=emailtoafriend
[SEPP Comment: Suspended in 40 year old technology.]

NASA Study Goes to Earth's Core for Climate Insights
By Staff Writers, Science Daily, Mar 11, 2011 [H/t Eric Gottshall]
http://www.sciencedaily.com/releases/2011/03/110311140706.htm

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ARTICLES:

1. Nuclear Overreactions

Modern life requires learning from disasters, not fleeing all risk
Editorial, WSJ, Mar 14, 2011 [H/t Ted Rockwell]
http://online.wsj.com/article/SB10001424052748704893604576198723013907008.html?mod=djemEditorialPage_t

After a once-in-300-years earthquake, the Japanese have been keeping cool amid the chaos, organizing an enormous relief and rescue operation, and generally earning the world's admiration. We wish we could say the same for the reaction in the U.S., where the troubles at Japan's nuclear reactors have produced an overreaction about the risks of modern life and technology.

Part of the problem is the lack of media proportion about the disaster itself. The quake and tsunami have killed hundreds, and probably thousands, with tens of billions of dollars in damage. The energy released by the quake off Sendei is equivalent to about 336 megatons of TNT, or 100 more megatons than last

year's quake in Chile and thousands of times the yield of the nuclear explosion at Hiroshima. The scale of the tragedy is epic.

Yet the bulk of U.S. media coverage has focused on a nuclear accident whose damage has so far been limited and contained to the plant sites. In simple human terms, the natural destruction of Earth and sea have far surpassed any errors committed by man.

Given the incomplete news reports, it is impossible to say how much worse the nuclear damage will be. Unlike the Soviets at Chernobyl, the Japanese have been taking sensible precautions like evacuating people near the plants and handing out iodine pills even if they may never be needed. These precautions increase public worry, but better to take them even if they prove to be unnecessary.

We will have plenty of time to dissect events at the reactors and the safety lessons going forward. William Tucker provides some useful context nearby, and one crucial point is that the containment walls seem to have held. These walls are designed to withstand quakes and explosions, and it is good news if they have done so. The crisis seems to have been triggered by the failure of diesel generators that provided electricity to cool the reactors once they were shut down. Mr. Tucker explains that this weakness has been corrected in new nuclear plant designs.

We have no special brief for nuclear power over any other energy source. Our view is that it should compete with other sources on a market basis, without subsidies or government loan guarantees. Every energy source has risks and economic externalities, whether they are noise and bird kills (wind), huge land requirements (solar), rig explosions and tanker spills (oil), or mining accidents (coal).

But more than other energy sources, nuclear plants have had their costs increased by artificial political obstacles and delay. The U.S. hasn't built a new nuclear plant since 1979, after the Three Mile Island meltdown, even as older nuclear plants continue to provide 20% of the nation's electricity.

The Tennessee Valley Authority is a couple of years away from completing a reactor at Watts Bar after years of effort. Proposals for 20 new reactors to be built over the next 15 to 20 years are in various stages of review in the multiyear approval process at the Nuclear Regulatory Commission, with two each in Georgia and South Carolina at the front of the line. But the much-ballyhooed "nuclear renaissance" is a long way off, and it will be longer after events in Japan.

Our larger point is less about nuclear power than how we react as a society to inevitable disasters, both natural and man-made. Because a plane crashes, we don't stop flying. Because an oil rig explodes in the Gulf, we don't (or at least we shouldn't) stop drilling for oil. And because the Challenger space shuttle blew up, we didn't stop shuttle flights—though we do seem to have lost much of our national will for further manned space exploration. We should learn from the Japanese nuclear crisis, not let it feed a political panic over nuclear power in general.

The paradox of material and technological progress is that we seem to become more risk-averse the safer it makes us. The more comfortable we become, the less eager we are to take the risks that are the only route to future progress. The irony is that one reason Japan has survived this catastrophic event as well as it has is its great material development and wealth.

Modern civilization is in the daily business of measuring and mitigating risk, but its advance requires that we continue to take risk. It would compound Japan's tragedy if the lesson America learns is that we should pursue the illusory and counterproductive goal of eliminating all risk
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2. Anti Nuke Agenda Clouds Real Japanese Health Threat

By Susan Ingber, ASCH Dispatch, Mar 14, 2011
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In the wake of a back-to-back 9.0 earthquake and tsunami, Japan is working tirelessly to rescue thousands of missing and injured residents and repair its ravaged neighborhoods. Now, many are also worrying over the potential for radiation emission from the Fukushima Daiichi nuclear power plant reactors that experienced cooling and pressure problems as a result of the natural disaster. The threat of radiation release, however, has been aggrandized by anti-nuclear activists who are exploiting the situation to satisfy their own political wonts, which is mainly to eliminate the use of nuclear power in the U.S.

While the tragedy of these natural disasters is being clouded by the press and anti-nuke propaganists who toss around words like "meltdown" and warn of "another Chernobyl," many experts are beginning to conclude that the radiation emissions are more comparable to the harmless Three Mile Island radiation leak of 1979.

An article from *The Wall Street Journal* summarizes that unlike the 1986 reactor disaster in Chernobyl — whose system was replete with hazardous flaws and serious operator errors — Japan's plants have engineered a solution to many of these problems that will also be resolved in the next generation of nuclear reactors:

> "What the Japanese earthquake has proved is that even the oldest containment structures can withstand the impact of one of the largest earthquakes in recorded history. The problem has been with the electrical pumps required to operate the cooling system. It would be tragic if the result of the Japanese accident were to prevent development of Generation III reactors, which eliminate this design flaw …
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> "If a meltdown does occur in Japan, it will be a disaster for the Tokyo Electric Power Company but not for the general public. Whatever steam releases occur will have a negligible impact. Researchers have spent 30 years trying to find health effects from the steam releases at Three Mile Island and have come up with nothing. With all the death, devastation and disease now threatening tens of thousands in Japan, it is trivializing and almost obscene to spend so much time worrying about damage to a nuclear reactor."

ACSH's Dr. Elizabeth Whelan agrees and argues that the news should focus on the real tragedies and public health threats. "Thousands of Japanese residents have been flooded out of their homes and trapped without adequate food or clean water. These unsanitary conditions could lead to epidemics of infectious disease. When you have both a once-in-a-lifetime earthquake and tsunami, the fact that the plants, although damaged, have not released significant levels of radiation is remarkable and a testament to the engineering and safety of the nuclear plants."

ACSH's Dr. Gilbert Ross adds that the anti-nuclear energy activists trying to exert pressure to stunt the progression of nuclear power "do not really care about nuclear safety. Eliminating nuclear power as a source of energy is the wrong answer from any point of view. Nuclear power offers the safest and cleanest source of energy on earth."

ACSH will update our readers as we continue to monitor the science on the Japanese nuclear reactors.
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3. Risk-Free Energy: Surely, You Must Be Joking

By Alex Berezow, Real Clear Science, Mar 15, 2011
http://www.realclearscience.com/articles/2011/03/15/risk-free_energy_surely_you_must_be_joking_106232.html

It was only a matter of time before environmentalists would point toward Japan, say, "We told you so," and then declare a moral victory for anti-nuclear activism. Merely for the sake of argument, let's pretend they are right.

Eliminating nuclear power might be a nice experiment. But there is one big problem: Environmentalists are trying to eliminate all the other alternatives, as well.

They oppose oil because drilling poses a risk to the environment. That is primarily why the United States is not tapping its own natural resources, such as in ANWR. Also, the U.S. has to rely on foreign powers-- often dictators-- to satisfy our "oil addiction." This threatens our national security and is ethically questionable. So, scratch oil off the list.

Coal is no good, either. The reason is because it is environmentally hazardous to extract, in addition to being dangerous to miners. Besides, burning it produces too much carbon dioxide and contributes to global warming. "Clean coal" is a fiction, according to environmentalists, so it is not worth researching.

Natural gas? Nope. Although it is much cleaner than coal, it is not carbon neutral. Thus, natural gas should be avoided, too.

Hydroelectric power used to enjoy broad support, but that appears to no longer be the case. Some now express concern because the process of constructing the plant itself (such as creating a reservoir) releases greenhouse gases. Environmentalists in Ohio blocked the construction of a hydroelectric plant because it would endanger plants and inconvenience fish.

It is fashionable today to support wind energy, unless you live near Nantucket Sound, where it is socially acceptable to oppose the Cape Wind project on aesthetic grounds. Others oppose wind turbines because they occasionally kill a few birds.

Ideally, the world would run entirely on solar power. It is both clean and safe, and the sun provides the planet with enough energy in a single hour to power the world for an entire year. And the best thing is it's completely renewable. (Well, that is, until the sun burns out.)

This is as close to a magical solution as is currently possible. However, solar cell efficiency (converting sunlight to electricity) remains an enormous technological obstacle. Currently,solar power only provides about 1% of our national energy, and it is unlikely to greatly increase anytime soon. But even if we could increase the efficiency of solar power, evidence indicates that environmentalists would oppose that, too. In California, the construction of a solar power plant has been held up due to concerns raised over the welfare of a lizard.

By now, the following fact should be quite obvious: All sources of energy pose some sort of risk or cost. Risk-free, cost-free energy is a complete myth and simply does not, and will not, exist.

Groups that never propose realistic solutions are simply not worth taking seriously. Unfortunately, this characterizes the arguments put forth by some environmentalists. They should not be given a seat at the adults' table until they demonstrate an ability to propose a serious solution to the most serious of problems.

Alex B. Berezow is the editor of RealClearScience. He holds a Ph.D. in microbiology.

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4. After the Quake, Japan Says 'Never Give Up'

'Fukutsu no seishin' is a common exhortation in Japanese culture. Never has this spirit been more important.

By Howard Stringer, WSJ, Mar 18, 2011

http://online.wsj.com/article/SB10001424052748703818204576206230110017092.html?mod=WSJ_Opinion_LEFTTopOpinion

As a Welshman by birth, an American by choice, and a resident of Japan by career, I have experienced firsthand how a nation's character shapes its fate. The world is well familiar with the Churchillian resolve of the British, exemplified most notably during World War II. Americans are a famously innovative and independent-minded people; such traits have contributed to their position of leadership in the world today. As for the Japanese, I believe their determined spirit will help them through this time of great trial in their lives. That spirit is aptly captured in the phrase *fukutsu no seishin*.

Fukutsu no seishin means "never give up" and is used especially in extreme circumstances. In the wake of the 9.0 earthquake, massive tsunami and burgeoning nuclear emergency, the phrase is often heard in Japan today. It reflects tenacity, perseverance and hope.

Equal in importance to the spirit of *fukutsu no seishin* in Japan is the strong sense of shared purpose. The thread of community is woven tightly through all Japanese. They are devoted to the cause of saving one another and their communities, not simply themselves. The foreign media have marveled at how calmly and patiently the survivors line up for food, water or gas. But it is no surprise to me that even when supplies run out, not only do the Japanese not riot, they do not even murmur an objection.

Many stories reported in recent days echo the equanimity, determination and charitable instincts of the people of Japan. The world reads in awe about heroes selflessly remaining in the nuclear power plant to try to save lives of people they will never know. Strangers share sustenance with one another. A father grasps his infant and won't let go, saying, "I have to protect my children."

Of course, as heartwarming and life-affirming as these stories are, the enormity of destruction is, for the time being, greater than the capacity of the people of Japan to cope. Whole villages have vanished, and hundreds of thousands remain in shelters and homeless. Medical personnel and equipment, food, water, electricity, shelter, heat, clothing—all are in short supply. It will become more important in the days and weeks ahead for help to flow into the country, so that the work of recovery can succeed. If the radiation crisis deepens, so too will the need for even more assistance, especially if thousands more must be evacuated or given urgent medical treatment.

All of us, wherever we live, should be inspired by the shocking scenes of devastation that appear on our televisions and computer screens to support the Japanese community with our prayers and our wallets, so that this epic disaster can more quickly retreat to a place in history and memory and no longer be an everyday reality.

In the meantime, the Japanese continue to do what they can to go on. Many workers in our company have spent the night at our facilities, or walked up to six hours simply to get home. Some of Sony's factories closer to the zone of destruction were damaged. We have had the kind of difficulties many businesses in Japan are experiencing today, from blackouts and transportation slowdowns to shortages of materials and suppliers unable to make shipments. Slowly but surely, we are beginning to emerge from the profound psychic and physical shock to our bodies and our businesses, and we are getting back on track.

Even before this crisis, in recent years the Japanese endured stagflation and recession. The second-most powerful economy in the world slid to No. 3. Some observers suggested that Japan's young people had lost their sense of purpose, undermined by that love child of prosperity known as complacency.

What we have witnessed in recent days suggests anything but complacency. That is why I am confident that the Japanese, guided by their strength of character and determination, will emerge from this time of trial and grievous loss stronger than before, and with a renewed sense of purpose. The people of Japan will have much to gain from our support. But we have much to learn by their example.

For no matter who we are or where we live, no doubt a time of trial will one day come. And when it does, we can only hope we respond to it as the Japanese have in this past week. With a national spirit of grace, generosity, and common cause that just never, never gives up.

Mr. Stringer is chairman, CEO and president of Sony Corp.

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5. Global warming: 10 little facts

Control the language, and you control the outcome of any debate
By Bob Carter, Quadrant, AU, Mar 14, 2011
http://www.quadrant.org.au/blogs/doomed-planet/2011/03/bob-carter

Ten dishonest slogans about global warming, and ten little facts.

Each of the following ten numbered statements reproduces verbatim, or almost verbatim, statements made recently by Australian government leaders, and repeated by their media and other supporters. The persons making these arguments might be termed (kindly) climate-concerned citizens or (less kindly, but accurately) as global warming alarmists.

Despairing of ever hearing sense from such people, some of whom have already attributed the cause of the devastating Japanese earthquake to global warming, a writer from the well regarded *American Thinker* has badged them as "idiot global warming fanatics".

Be that as it may, most of the statements below, self-evidently, were crafted as slogans, and all conform with the obnoxious and dishonest practice of political spin – in which, of course, the citizens of Australia have been awash for many years. The statements also depend heavily upon corrupt wordsmithing with propaganda intent, a technique that international Green lobbyists are both brilliant at and relentless in practising.

The ten statements below comprise the main arguments that are made in public in justification for the government's intended new tax on carbon dioxide. Individually and severally these arguments are without merit. That they are intellectually pathetic too is apparent from my brief commentary on each.

It is a blight on Australian society that an incumbent government, and the great majority of media reporters and commentators, continue to propagate these scientific and social inanities.

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1. We must address carbon (sic) pollution (sic) by introducing a carbon (sic) tax.

> The argument is not about carbon or a carbon tax, but rather about carbon dioxide emissions and a carbon dioxide tax, to be levied on the fuel and energy sources that power the Australian economy.
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> Carbon dioxide is a natural and vital trace gas in Earth's atmosphere, an environmental benefit without which our planetary ecosystems could not survive. Increasing carbon dioxide makes many plants grow faster and better, and helps to green the planet.

To call atmospheric carbon dioxide a pollutant is an abuse of language, logic and science.

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2. We need to link much more closely with the climate emergency.

There is no "climate emergency"; the term is a deliberate lie. Global average temperature at the end of the 20th century fell well within the bounds of natural climate variation, and was in no way unusually warm, or cold, in geological terms.

Earth's temperature is currently cooling slightly.

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3. Putting a price on carbon (sic) will punish the big polluters (sic).

A price on carbon dioxide will impose a deliberate financial penalty on all energy users, but especially energy-intensive industries. These imaginary "big polluters" are part of the bedrock of the Australian economy. Any cost impost on them will be passed straight down to consumers.

It is consumers of all products who will ultimately pay, not the industrialists or their shareholders.

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4. Putting a price on carbon (sic) is the right thing to do; it's in our nation's interest.

The greatest competitive advantage of the Australian economy is cheap energy generated by coal-fired power stations.

To levy an unnecessary tax on this energy source is economic vandalism that will destroy jobs and reduce living standards for all Australians.

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5. Putting a price on carbon (sic) will result in lower carbon dioxide emissions.

Economists know well that an increase in price of some essential things causes little reduction in usage. This is true for both energy (power) and petrol, two commodities that will be particularly hit by a tax on carbon dioxide emissions.

Norway has had an effective tax on carbon dioxide since the early 1990s, and the result has been a 15% INCREASE in emissions.

At any reasonable level ($20-50/t), a carbon dioxide tax will result in no reduction in emissions.

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6. We must catch up with the rest of the world, who are already taxing carbon dioxide emissions.

They are not. All hope of a global agreement on emissions reduction has collapsed with the failure of the Copenhagen and Cancun climate meetings. The world's largest emitters (USA and China) have made it crystal clear that they will not introduce carbon dioxide tax or emissions trading.

The Chicago Climate Exchange has collapsed, chaos and deep corruption currently manifests the European exchange and some US states are withdrawing from anti-carbon dioxide schemes.

Playing "follow the leader" is not a good idea when the main leader (the EU) has a sclerotic economy characterised by lack of employment and the flight of manufacturers overseas.

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7. Australia should show leadership, by setting an example that other countries will follow.

Self-delusion doesn't come any stronger than this.

For Australia to introduce a carbon dioxide tax ahead of the large emitting nations is to render our whole economy to competitive and economic disadvantage for no gain whatsoever.

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8. We must act, and the earlier we act on climate change the less painful it will be.

The issue at hand is global warming, not the catch-all, deliberately ambiguous term climate change.

Trying to prevent hypothetical "dangerous" warming by taxing carbon dioxide emissions will be ineffectual, and is all pain for no gain.

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9. The cost of action on carbon (sic) pollution (sic) is less than the cost of inaction.

This statement is fraudulent. Implementing a carbon dioxide tax will carry large costs for workers and consumers, but bring no measurable cooling (or other change) for future climate.

For Australia, the total cost for a family of four of implanting a carbon dioxide tax will exceed $2,500/yr* – whereas even eliminating all of Australia's emissions might prevent planetary warming of 0.01 deg. C by 2100**.**

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10. There is no do-nothing option in tackling climate change.

Indeed.

However, it is also the case that there is no demonstrated problem of "dangerous" global warming. Instead, Australia continues to face many self-evident problems of natural climate change and hazardous natural climate events. A national climate policy is clearly needed to address these issues.

The appropriate, cost-effective policy to deal with Victorian bushfires, Queensland floods, droughts, northern Australian cyclones and long-term cooling or warming trends is the same.

It is to prepare carefully for, and efficaciously deal with and adapt to, all such events and trends whether natural or human-caused, ***as and when they happen***. Spending billions of dollars on expensive and ineffectual carbon dioxide taxes serves only to reduce wealth and our capacity to address these only too real world problems.

Preparation for, and adaptation to, all climate hazard is the key to formulation of a sound national climate policy.

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Notes:

*Assuming a tax rate of $25/tonne of CO_2, and Australia's emissions being 550 million tonnes, indicates a total cost of $13.8 billion. Spread across a population of 22 million persons, that equates with $627/person/year.

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