

The Week That Was: 2013-12-07 (December 7, 2013)

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The Science and Environmental Policy Project

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Quote of the Week: • "Absolute certainty is a privilege of uneducated minds-and fanatics. It is, for scientific folk, an unattainable ideal." Cassius J. Keyser, American Mathematician

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Number of the Week: 1 million and 1.3 million

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In 2014, we will continue to face a large number of proposed EPA regulations that will do little for the environment but will certainly retard or even stop economic growth.

Our task for 2014 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.

Also, we will be addressing regulations from other Federal agencies that desire to control the clean use of coal as a fuel, the expansion of oil and natural gas production in the US, as well as agencies that use the false social cost of carbon, and other issues pertaining to needless environmental regulations restricting economic growth.

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SEASON'S GREETINGS

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PLEASE NOTE: The SEPP web site have been hit by hackers. These are similar to the hackings to web sites of some high fashion retailers and to the web site of the US Health and Human Services Department. Those going to the SEPP web site seeking past issues have been redirected to web sites of Chinese products. We are working diligently to correct this situation. It should not affect donations. If you experience any difficulties please e-mail Ken@SEPP.org.

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THIS WEEK:

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

Ethanol and Biomass: This week, SEPP made a presentation at an EPA hearing on the 2014 renewable fuel standards (RFS) and 2015 biomass-based diesel volume. The purpose is to establish the annual percentage standards for cellulosic, biomass-based diesel, advanced biofuel, and total renewable fuels for 2014. A secondary purpose is to determine the applicable national volume of biomass-based diesel required for 2015. The Energy Independence and Security Act (EISA) of 2007 does not establish standards for the latter beyond 2012.

The principal conflict is that the nation has hit the “blend wall.” Gasoline consumption is down, and the ethanol volume required by the act would necessitate that the percentage of ethanol mixed with gasoline to exceed 10%. EPA has the discretionary authority to reduce the volume requirement and is considering doing so. The automobile manufacturers and the petroleum industry have requested such a reduction, arguing that a higher ethanol percentage would be potentially damaging to gasoline engines.

SEPP’s comments were a shift in approach in addressing such issues before a potentially adversarial, non-technical audience. Rather than arguing that the EPA science is wrong, the comments argued that the science is out of date. It has been superseded by events. The three lines of evidence presented by the EPA in its Endangerment Finding no longer support the finding. The distinct human fingerprint (pronounced warming of the atmosphere above the tropics) cannot be found, the claimed unprecedented and dangerous global surface warming stopped 16 years ago, and the models are unreliable because they failed to predict that warming would stop.

Similarly, the 2007 mandate was passed by a Congress during a time in which its judgment was clouded by two fears: 1) increased dependence on imported oil from unstable regions and 2) global warming from CO2 emissions endangering human health and welfare. Both fears are out of date, rendering the standards obsolete.

There were 144 speakers listed. As can be expected, the majority of speakers were from the corn-to-ethanol industry and the biofuel industry who opposed the volume reduction. The Governor of Iowa denounced the proposed change stating the administration is unduly influenced by big oil – no doubt a surprise to the petroleum lobby.

The principle arguments opposing the RFS reduction included: green jobs, ethanol is cheaper than gasoline, ethanol helps rural America, national security, global warming, big oil is manipulating the EPA, etc.

Those supporting the reduction and some who oppose the RFS altogether included representatives from the food industry and gasoline station owners. The arguments included that ethanol and biofuels are driving up food prices and that ethanol is a burden to gas station owners.

A special panel two members of the House of Representatives spoke. Rep. Goodlatte (R-VA), who is the Chairman of the Judiciary Committee and Vice Chairman of the Agriculture Committee, spoke strongly against the RFS and presented a letter signed by some 190 members of the House, stating that the RFS will be revisited in 2014. Rep. Goodlatte stated that although the RFS is beneficial to the corn industry, overall it is distorting the markets for food, feed, and fuel. He asserted there must be a better way to help the corn industry.

The real surprise was Rep. Peter Welch (D-VT) who, as a freshman Congressman, was one of the authors of the 2007 RFS. He stated the RFS was “a well-intentioned flop.” Also, he complained

that ethanol ruined his chainsaw, a common complaint by owners of two cycle engines. See links under Green Jobs, EPA and other Regulators on the March, and Alternative, Green (“Clean”) Energy – Other.

Fossil Fuel Subsidies: Promoters of wind and other alternative forms of energy in Western countries are again bring up world-wide fossil fuel subsidies. As discussed in the April 6 and April 13 TWTWs and in an article by Bjorn Lomborg carried in the November 12 TWTW, 75% of the subsidies occur in 12 countries. The 5 major ones are, in order, Iran (\$82 billion), Saudi Arabia (\$61 billion), Russia, India, China (between \$30 to \$40 billion), and Venezuela, Egypt, Iraq, U.A.E., Indonesia, Mexico and Algeria making up the rest. The subsidies occur by state controlled oil companies of these countries selling oil products below world market prices. In Venezuela gasoline costs as little as 1.5 cents a gallon, unofficial exchange rate, up to 5.6 cents a gallon for premium, official exchange rate. Since politicians of these countries choose to subsidize petroleum to promote political stability, should Western politicians subsidize unreliable solar and wind to promote grid instability? See the prior TWTWs and links under Communicating Better to the Public – Make things up.

Changing Change: First it was the fear of global warming. When that stopped, the orthodoxy tried climate disruption, then climate change, which has been ongoing for hundreds of millions of years. Now, the US National Research Council has come up with a new fear – abrupt climate change. How a gradual increase of carbon dioxide (CO₂) concentrations in the atmosphere causes abrupt climate change is not well explained, but the label **may** stick this time! The real issue at stake is not the fear, but the loss of credibility of once vaunted scientific institutions that produce statements such as: *Climate is changing, forced out of the range of the past million years by levels of carbon dioxide and other greenhouse gases not seen in the Earth's atmosphere for a very, very long time. Lacking action by the world's nations, it is clear that the planet will be warmer, sea level will rise, and patterns of rainfall will change.* See links under Defending the Orthodoxy.

Lost? Judith Curry discussed an article asserting that science has lost its way. The article deals with rewards for researchers in life sciences and that many splashy research results cannot be reproduced. Curry divides research into four types and suggests rewards structures should be tailored according to the specific type of research. When discussing climate research, she further states: *In terms of money being thrown down a rathole for climate research, ... that taxonomical studies of model-based regional impacts rests on the premise that climate models provide useful information for regional impact studies, and they do not.* Well put. Studies based on long term projections from un-validated climate models have little value. See link under Seeking a Common Ground.

Uncertainty: On the Plos blog, Tamsin Edwards has a post on uncertainty and how people perceive it. It is based on a conference on “Communicating Risk and Uncertainty around Climate Change.” Nine attitudes are discussed including people have a finite pool of worry, often interpret uncertainty as ignorance, and are uncomfortable with uncertainty. One of the points made was how to respond if a journalist asks: *“What does it mean to increase from 90% confident to 95% confident?”*, a scientist could make this clearer with *“[We think] the chance climate change is natural is now half as likely as before.”*

Of course, such a response is not improvement in the issue. As the models, on which the UN Intergovernmental Panel on Climate Change (IPCC) heavily relies, diverge further from actual observations, the IPCC has expressed greater certainty in its work. In effect, as the public has

greater reason to doubt the work, the IPCC insists that it is more certain. No wonder its climate scientists need special conferences on communicating better with the public. Expression of a little doubt may be helpful. See link under Seeking a Common Ground.

Extreme Weather: Although the year has not ended, it appears to be a dud for those claiming more, extreme weather events. US tornados are down, the hurricane season was uneventful, and major global tropical cyclones making landfall are down. Roger Pielke Jr. posted the latest cyclone statistics with a link to the work by Ryan Maue of WeatherBell Analytics. The Global and Northern Hemisphere Accumulated Cyclone Energy (ACE) does not justify the claims of more extreme weather events. In January, it will be interesting to review the financial report of Munich Re, the large reinsurance firm. One must wonder if the rather tame weather is what the National Research Council defines as abrupt climate change. See link under changing weather and <http://models.weatherbell.com/tropical.php>

Earthquakes: On an amusing note, the UK newspaper, *Independent*, reported that, during an American football game, the Seattle Seahawk fans created such an uproar that the Pacific Northwest Seismic Network detected vibrations that measured between magnitude 1 and 2 earthquake. One wonders how this compares with earthquakes reported occurring from hydraulic fracturing of dense shale. Please see link under Changing Earth.

Number of the Week: 1 million and 1.3 million. The *Wall Street Journal* reports that the daily oil production from the Bakken formation in North Dakota will pass 1 million barrels per day (bbd) this month and the production from the Eagle Ford formation in Texas is approaching 1.3 million bbd. In January 2009, the production from the Bakken was about 100,000 bbd and in 2009 the average production from Eagle Ford was 843 bbd. The Federal agencies, which control US government land, have yet to finish the regulations on smart drilling that they claim are necessary to permit hydraulic fracturing on the lands they control. See

http://en.wikipedia.org/wiki/File:Bakken_Oil_Production_ND.png and <http://www.rrc.state.tx.us/eagleford/EagleFordOilProduction.pdf>

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ARTICLES:

For the numbered articles below please see this week’s TWTW at: www.sepp.org. The articles are at the end of the pdf.

1. In Fracking, Sand Is the New Gold

Energy Boom Fuels Demand for Key Ingredient Used in Drilling Wells; 100 Sand Mines in Wisconsin

By Alison Sider and Kristin Jones, WSJ, Dec 2, 2013

http://online.wsj.com/news/articles/SB10001424052702304868404579194250973656942?mod=WSJ_Energy_2_4_Right

2. Moving Crude by Railcar Stalls on the Track

Heightened Safety Concerns, Slow Permit Approval Hinder Some Firms' Efforts

By Alison Sider, WSJ, Dec 5, 2013

http://online.wsj.com/news/articles/SB10001424052702303332904579224000594400852?mod=WSJ_Energy

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NEWS YOU CAN USE:

Science: Is the Sun Rising?

IPCC Finds The Important Natural Climate Driver – Solar Surface Radiation Intensity – But Then Ignores It!

By D.E. Koelle, Posted by P. Gosselin, No Tricks Zone, Dec 1, 2013

<http://notrickszone.com/2013/12/01/ipcc-finds-the-important-natural-climate-driver-solar-surface-radiation-intensity-but-then-ignores-and-buries-it/>

Decisive for the climate and temperature changes is not the solar irradiance at the edge of the atmosphere, rather it is the amount of solar energy that makes it to the Earth's surface.

Challenging the Orthodoxy

Václav Klaus: French criticism of the global warming champions' fanaticism

Review of Pascal Bruckner's book "The Fanaticism of the Apocalypse" by the Czech ex-president
Translation by Luboš Motl, The Reference Frame, Dec 5, 2013

<http://motls.blogspot.com/2013/12/vaclav-klaus-french-criticism-of-global.html>

The Best the IPCC Can Do

If a slick video and the IPCC's latest inaccurate and untruthful arguments are the best it can do to demonstrate a dangerous warming problem, its advice should be ignored and funding withdrawn

By Bob Carter, Quadrant, Dec 4, 2013

<http://quadrant.org.au/opinion/doomed-planet/2013/12/26217/>

German Scientists Show Climate Driven By Natural Cycles – Global Temperature To Drop To 1870 Levels By 2100!

Climate reveals periodic nature, thus no influence by CO2

By H. Luedecke and C.O. Weiss, Posted by P. Gosselin, No Tricks Zone, Dec 3, 2013

<http://notrickszone.com/2013/12/03/german-scientists-show-climate-driven-by-natural-cycles-global-temperature-to-drop-to-1870-levels-by-2100/>

[SEPP Comment: Open to challenge.]

Defending the Orthodoxy

Panel Says Global Warming Carries Risk of Deep Changes

By Justin Gillis, NYT, Dec 3, 2013

http://www.nytimes.com/2013/12/04/science/earth/panel-says-global-warming-risks-sudden-deep-changes.html?utm_source=Weekly+Carbon+Briefing&utm_campaign=bcc9de284f-Carbon_Brief_Weekly_18_7_137_18_2013&utm_medium=email&utm_term=0_3ff5ea836a-bcc9de284f-215218249&r=0

Link to the report: Abrupt Impacts of Climate Change: Anticipating Surprises (2013)

By Committee on Understanding and Monitoring Abrupt Climate Change and Its Impacts; Board on Atmospheric Sciences and Climate; Division on Earth and Life Studies; National Research Council

National Academies Press, No Date

http://www.nap.edu/catalog.php?record_id=18373&utm_source=Weekly+Carbon+Briefing&utm_campaign=bcc9de284f-Carbon_Brief_Weekly_18_7_137_18_2013&utm_medium=email&utm_term=0_3ff5ea836a-bcc9de284f-215218249

Continuing with pledge pathways to 2030 could push climate goals out of reach

By Staff Writers, IIASA, Dec 3, 2013 [H/t WUWT]

<http://www.iiasa.ac.at/web/home/about/news/20131203-ClimatePledges.en.html>

[SEPP Comment: An imaginary climate goal is always out of reach.]

Questioning the Orthodoxy

A Theory Ready for Extinction

Don't worry too much over those warmist predictions that millions of species will soon be lost to climate change. Judging by their methods it is the doomsayers who are the real dodos

By David Stockwell, Quadrant, Dec 3, 2013

<http://quadrant.org.au/opinion/doomed-planet/2013/12/theory-fit-extinction/>

Blaming the developed world for the forces of nature

Bad science puts rich nations on the hook for trillions in climate liabilities

By Tom Harris and Madhav Khandekar, Washington Times, Dec 3, 2013

<http://www.washingtontimes.com/news/2013/dec/3/harris-and-khandekar-blaming-the-developed-world-f/>

Same old New Scientist

By Andrew Montford, Bishop Hill, Dec 5, 2013

<http://bishophill.squarespace.com/blog/2013/12/5/same-old-new-scientist.html>

Global-warming ‘proof’ is evaporating

By Michael Fumento, New York Post, Dec 5, 2013

<http://nypost.com/2013/12/05/global-warming-proof-is-evaporating/>

Majority rules on climate science?

By Jeff Jacoby, Boston Globe, Dec 4, 2013 [H/t Timothy Wise]

<http://www.bostonglobe.com/opinion/2013/12/04/climate-alarmists-science-isn-settled-majority-vote/CZEK7XP10TfvpiiJ04zulK/story.html>

Mail wars: Heartland -vs- the AMS

By Anthony Watts, WUWT, Dec 2, 2013

<http://wattsupwiththat.com/2013/12/02/mail-wars-heartland-vs-the-ams/>

UN's war on coal threatens environmental progress in world's desperate regions

By Donna Laframboise, Financial Post, Dec 3, 2013

<http://opinion.financialpost.com/2013/12/03/uns-war-on-coal-threatens-environmental-progress-in-worlds-desperate-regions/>

Yes, The Overheated Climate Crisis Debate Is Settled. So Chill Out And Relax

By Larry Bell, Forbes, Dec 3, 2013

<http://www.forbes.com/sites/larrybell/2013/12/03/yes-the-overheated-climate-crisis-debate-is-settled-so-chill-out-and-relax/>

Problems in the Orthodoxy

The Poor Need Cheap Fossil Fuels

By Bjorn Lomborg, NYT, Dec 3, 2013 [H/t GWPF]

<http://www.nytimes.com/2013/12/04/opinion/the-poor-need-cheap-fossil-fuels.html>

Europe Climate Policy Blows Engine... "Giant Failure" ... Scientists "Failed Tricking Their Way Past Democracy" ... Mood Of Resignation

By P. Gosselin, No Tricks Zone, Nov 30, 2013

<http://notrickszone.com/2013/11/30/europe-climate-policy-blows-engine-huge-failure-scientists-failed-tricking-their-way-past-democracy-mood-of-resignation/>

Leading Climate Policy Advisor On Warsaw: “A Failure Even When Measured By Lowest Expectations...2°C Target Failed”

By P. Gosselin, No Tricks Zone, Dec 2, 2013

<http://notrickszone.com/2013/12/02/leading-climate-policy-advisor-on-warsaw-a-failure-even-when-measured-by-lowest-expectations-2c-target-failed/>

Poland argues for delay to EU 2030 climate package

By Sophie Yeo, RTCC, Dec 6, 2013 [H/t GWPF]

<http://www.rtcc.org/2013/12/05/poland-argues-for-delay-to-eu-2030-climate-package/>

Seeking a Common Ground

Has science lost its way?

By Judith Curry, Climate Etc. Dec 1, 2013

<http://judithcurry.com/2013/12/01/has-science-lost-its-way/>

Nine Lessons and Carols in Communicating Climate Uncertainty

By Tamsin Edwards, PLOS blogs, Dec 6, 2013 [H/t WUWT]

<http://blogs.plos.org/models/nine-lessons-and-carols-in-communicating-climate-uncertainty/>

Polar bear conservation: the next 10 years

By Susan Crockford, Polar Bear Science, Dec 3, 2013

<http://polarbearscience.com/2013/12/03/polar-bear-conservation-the-next-10-years/>

A recent genetic study indicated that polar bears survived the Eemian interglacial (130,000 to 115,000 years ago) with a relatively large population, despite much less ice than today. Computer models, on the other hand, predicted almost total extinction of polar bears under similar conditions.

There is no Denying Global Warming

By Donn Dears, Power for USA, Dec 6, 2013

<http://dddusmma.wordpress.com/2013/12/06/there-is-no-denying-global-warming/>

US Climate Variability and Predictability Program Science Plan

By Judith Curry, Climate Etc. Dec 5, 2013

<http://judithcurry.com/2013/12/05/us-climate-variability-and-predictability-program-science-plan/>

Link to US CLIVAR Science Plan:

http://usclivar.org/science_plan

Lowering Standards

Global Warming Consensus Crumbling

By clincher.]Paul Homewood, Not a Lot of People Know That, Dec 6, 2013 [H/t GWPF]

<http://notalotofpeopleknowthat.wordpress.com/2013/12/06/global-warming-consensus-crumbling/>

[SEPP Comment: More on the poll by the AMS. The next to last paragraph is the clincher -- "How worried are you about global warming?" Only 30% answered "very worried."]

Questioning European Green

A £50 green energy tax cut is good news. The bad news? Britain will have to foot a £300BILLION eco-bill by 2030

By David Rose, Mail, UK, Nov 30, 2013 [H/t Bishop Hill]

<http://www.dailymail.co.uk/debate/article-2516289/A-50-green-energy-tax-cut-good-news-The-bad-news-Britain-foot-300BILLION-eco-2030.html>

800,000 people 'lifted' out of fuel poverty – by redefining it

By Tom Bawden, Independent, UK, Dec 2, 2013 [H/t GWPF]

<http://www.independent.co.uk/news/uk/politics/800000-people-lifted-out-offuel-poverty--by-redefining-it-8976232.html>

Britain's £85 billion bill for climate policies

A new study claims Britain's climate change initiatives are both 'staggeringly costly and excessive'

By Robert Mendick, Telegraph, UK, Dec 1, 2013 [H/t GWPF]

<http://www.telegraph.co.uk/earth/environment/climatechange/10486223/Britains-85-billion-bill-for-climate-policies.html>

Our enemy is not global warming. In Britain, people are dying of the cold

Everyone talks about the human cost of climate change. What about pensioners dying in the cold?

Editorial, The Spectator, Nov 30, 2013 [H/t GWPF]

<http://www.spectator.co.uk/the-week/leading-article/9088931/winter-fuel/>

German Households Face Annual €30 Billion Cost For Green Energy Subsidies

By Daniel Wetzel, Die Welt, Trans. Philipp Mueller, Dec 5, 2013

<http://www.thegwpf.org/german-households-face-annual-e30-billion-cost-green-energy-subsidies/>

Green Jobs

Green jobs: £1 million each

By Andrew Montford, Bishop Hill, Dec 5, 2013

<http://bishophill.squarespace.com/blog/2013/12/5/green-jobs-1-million-each.html>

EPA fuel mandate imperils biofuel industry, producers warn

By Laura Barron-Lopez, The Hill, Dec 5, 2013

<http://thehill.com/blogs/e2-wire/e2-wire/192138-epa-fuel-mandate-imperils-biofuel-producers>

The proposal could threaten up to 8,000 jobs, Evans said

[SEPP Comment: A tiny number of green jobs compared with the jobs being created by the oil and gas industry, without subsidies or mandates.]

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

Antarctic fjords are climate-sensitive hotspots of diversity in a rapidly warming region

By Staff Writers, Manoa HI (SPX), Dec 06, 2013

http://www.terraily.com/reports/Antarctic_fjords_are_climate_sensitive_hotspots_of_diversity_in_a_rapidly_warming_region_999.html

The Choice May Be Global Warming Or A New Ice Age, Say Scientists

By Staff Writer, The National, UAE, Nov 30, 2013 [H/t GWPF]

<http://www.thenational.ae/uae/science/the-choice-may-be-global-warming-or-a-new-ice-age-say-scientists#full>

Communicating Better to the Public – Make things up.

Ex-NASA expert issues call for climate solutions

By Staff Writers, Washington (AFP), Dec 02, 2013

http://www.terraily.com/reports/Ex-NASA_expert_issues_call_for_climate_solutions_999.html

The warming of the past few decades "has brought global temperature close to if not slightly above the prior range of the Holocene," he said, referring to the last 11,700 years of Earth history, since the end of the last Ice Age. ???

[SEPP Comment: The latest from James Hansen.]

When a tax is not a tax; when a subsidy is not a subsidy: the liberal-left's Orwellian assault on our language

By James Delingpole, Telegraph, UK, Dec 6, 2013

<http://blogs.telegraph.co.uk/news/jamesdelingpole/100249032/when-a-tax-is-not-a-tax-when-a-subsidy-is-not-a-subsidy-the-liberal-lefts-orwellian-assault-on-our-language/>

Green fairies

By Andrew Montford, Bishop Hill, Dec 2, 2013

<http://bishophill.squarespace.com/blog/2013/12/2/green-fairies.html>

Australia at risk of severe consequences of climate change

By Staff Writers, Sydney (UPI), Dec 3, 2013

http://www.terraily.com/reports/Australia_at_risk_of_severe_consequences_of_climate_change_999.html

More droughts, heavier rains in warmer Europe, study

By Staff Writers, Paris (AFP), Dec 02, 2013

http://www.terraily.com/reports/More_droughts_heavier_rains_in_warmer_Europe_study_999.html

Models v. Observations

In The Models Only! Leading German Experts Find “No Statistical Increase In Storm Frequency Or Intensity”

By P. Gosseelin, No Tricks Zone, Dec 6, 2013

<http://notrickszone.com/2013/12/06/in-the-models-only-leading-german-experts-find-no-statistical-increase-in-storm-frequency-or-intensity/>

Changing Weather

Global Tropical Cyclone Landfalls 2013

By Roger Pielke Jr, His Blog, Dec 6, 2013

<http://rogerpielkejr.blogspot.com/2013/12/global-tropical-cyclone-landfalls-2013.html>

Historical Temperature Trends in Asia (Excluding China and Russia)

By Staff Writers, SPPI & CO2 Science, Dec 4, 2013

http://scienceandpublicpolicy.org/originals/historical_temperature_trends_in_asia.html

Rainfall to blame for decline in Arctic peregrines

By Staff Writers, Edmonton, Canada (SPX), Dec 06, 2013

http://www.terraily.com/reports/Rainfall_to_blame_for_decline_in_Arctic_peregrines_999.html

Changing Earth

NFL fans 'cause earthquake' during game in Seattle

Simon Rice, Independent, UK, Dec 4, 2013

<http://www.independent.co.uk/sport/general/others/nfl-fans-cause-earthquake-during-game-in-seattle-8982971.html>

Land clearing caused drop in rainfall in South West of Australia

By Jo Nova, Her Blog, Dec 6, 2013

<http://joannenova.com.au/2013/12/land-clearing-responsible-for-most-of-rainfall-decline-in-south-west-western-australia/>

Acidic Waters

Arctic study shows key marine food web species at risk from increasing CO2

By Staff Writers, Exeter, UK (SPX), Dec 03, 2013

http://www.terraviva.com/reports/Arctic_study_shows_key_marine_food_web_species_at_risk_from_increasing_CO2_999.html

[SEPP Comment: Copepods formed long ago when atmospheric CO2 was far higher than today. Some copepods live in freshwater swamps with pH as low as 4.]

Rising Ocean Acidification Leads to Anxiety in Fish

By Staff Writers, San Diego CA (SPX), Dec 06, 2013

http://www.terraviva.com/reports/Rising_Ocean_Acidification_Leads_to_Anxiety_in_Fish_999.html

[SEPP Comment: Fish must have been neurotic when the atmosphere was many times richer in CO2 than today.]

Review of Recent Scientific Articles by NIPCC

For a full list of articles see www.NIPCCreport.org

Climate Change Impacts on Wheat Production in Central Asia

Reference: Sommer, R., Glazirina, M., Yuldashev, T., Otarov, A., Ibraeva, M., Martynova, L., Bekenov, M., Kholov, B., Ibragimov, N., Kobilov, R., Karaev, S., Sultonov, M., Khasanova, F., Esanbekov, M., Mavlyanov, D., Isaev, S., Abdurahimov, S., Ikramov, R., Shezdyukova, L. and de Pauw, E. 2013. Impact of climate change on wheat productivity in Central Asia. *Agriculture, Ecosystems and Environment* 178: 78-99.

<http://nipccreport.org/articles/2013/dec/3dec2013a1.html>

[SEPP Comment: Positive!]

The Strange "Global Warming" of the Antarctic Peninsula

Reference: Franzke, C. 2013. Significant reduction of cold temperature extremes at Faraday/Vernadsky station in the Antarctic Peninsula. *International Journal of Climatology* 33: 1070-1078.

<http://nipccreport.org/articles/2013/dec/3dec2013a2.html>

[SEPP Comment: It is not the heat but the relief from cold.]

Long-Term Effects of Atmospheric CO2 Enrichment on Plant-Insect Interactions

Reference: Stiling, P., Moon, D., Rossi, A., Forkner, R., Hungate, B.A., Day, F.P., Schroeder, R.E. and Drake, B. 2013. Direct and legacy effects of long-term elevated CO2 on fine root growth and plant-insect interactions. *New Phytologist*: 10.1111/nph.12295.

<http://nipccreport.org/articles/2013/dec/3dec2013a4.html>

[SEPP Comment: Greater resistance to insect damage.]

Modeling the South American Monsoon System

Reference: Jones, C. and Carvalho, L.M.V. 2013. Climate change in the South American Monsoon System: Present climate and CMIP5 projections. Journal of Climate 26: 6660-6678.

<http://nipccreport.org/articles/2013/dec/4dec2013a1.html>

Cap-and-Trade and Carbon Taxes

U.N. carbon offset market seen 'in a coma' for years after Warsaw

By Susanna Twidale, Reuters, Nov 29, 2013 [H/t GWPF]

<http://in.reuters.com/article/2013/11/29/us-un-carbon-idINBRE9AS0H520131129>

UN \$315 billion CDM carbon market comatose after Warsaw. It may last years

By Joe Nova, Her Blog, Dec 5, 2013

<http://joannenova.com.au/2013/12/un-315billion-cdm-carbon-market-comatose-after-warsaw-it-may-last-years/#more-32079>

[SEPP Comment: No one is bothering to keep the graph of the Clean Development Mechanism (CDM) current, as the market is collapsing.]

Subsidies and Mandates Forever

Centrica threatening to pull plug on £2bn offshore wind farm plan

British Gas owner Centrica prepares to abandon £2bn offshore wind farm plan because subsidies offered by the government are too low.

By Emily Gosden, Telegraph, UK, Nov 3, 2013 [H/t GWPF]

<http://www.telegraph.co.uk/finance/newsbysector/energy/10423952/Centrica-threatening-to-pull-plug-on-2bn-offshore-wind-farm-plan.html>

Ending the wind tax credit

A mature industry no longer needs taxpayer support

By Don Nickles, Washington Times, Dec 5, 2013

<http://www.washingtontimes.com/news/2013/dec/5/nickles-ending-the-wind-tax-credit/>

Erratic and arbitrary UK renewable subsidies are likely to end in failure

By Benny Peiser, City A.M. Dec 5, 2013 [H/t GWPF]

<http://www.cityam.com/article/1386205621/erratic-and-arbitrary-uk-renewable-subsidies-are-likely-end-failure>

EPA and other Regulators on the March

EPA's New Overseer Of 'Scientific Integrity': The Blind Leading The Blind

By Henry Miller, Forbes, Dec 4, 2013 [H/t Cooler Heads]

http://www.forbes.com/sites/henrymiller/2013/12/04/epas-new-overseer-of-scientific-integrity-the-blind-leading-the-blind/?utm_source=allactivity&utm_medium=rss&utm_campaign=20131204

The EPA has long been intellectually, scientifically and ethically bankrupt. Francesca Grifo will fit right in.

EPA Releases Draft Strategy Plan For Next Four Years

By Sonal Patel, Power News, Nov 27, 2013

http://www.powermag.com/epa-releases-draft-strategy-plan-for-next-four-years/?hq_e=e1&hq_m=2796072&hq_l=10&hq_v=5e660500d0

Link to Plan: Draft FY 2014-2018 EPA Strategic Plan, Nov 19, 2013

<http://www.regulations.gov/#!documentDetail;D=EPA-HQ-OA-2013-0555-0002>

Public Comment Period Nov 19, 2013 – Jan 3, 2014

EPA Power Plant Regulations: A Backdoor Energy Tax

By Nicolas Loris, Kevin Dayaratna and David W. Kreutzer, Heritage, Dec 5, 2013

<http://www.heritage.org/research/reports/2013/12/epa-power-plant-regulations-a-backdoor-energy-tax>

DOE official defends administration carbon capture rules

By Laura Barron-Lopez, The Hill, Dec 3, 2013

<http://thehill.com/blogs/e2-wire/e2-wire/191933-doe-official-defends-administration-carbon-capture-rules>

[SEPP Comment: DOE has the EPA disease – false claims about commercially available technology.]

The Great Green Lie: CCS Today Is Not Like Scrubbers in the 1970s (Part II)

By William Yeatman, Master Resource, Dec 6, 2013

<http://www.masterresource.org/2013/12/the-great-green-lie-ccs-today-is-not-like-scrubbers-in-the-1970s-part-ii-3/>

Democrats push EPA to act fast on greenhouse gas

By Laura Barron-Lopez, The Hill, Dec 4, 2013

<http://thehill.com/blogs/e2-wire/e2-wire/192105-democrats-push-epa-to-act-fast-on-greenhouse-gas>

[SEPP Comment: HFCs are the new target. They replaced CFCs which were blamed for reduction of the ozone layer.]

Both parties reject EPA fire hydrant guidance

By Pete Kasperowicz, The Hill, Dec 2, 2013

<http://thehill.com/blogs/floor-action/votes/191828-gop-dems-reject-epa-rule-on-fire-hydrants>

[SEPP Comment: A 384-0 vote!]

Renewable debate has EPA over a barrel

By Jennifer Dlougy, San Antonio Express News, Dec 5, 2013

<http://www.mysanantonio.com/business/eagle-ford-energy/article/Renewable-debate-has-EPA-over-a-barrel-5039614.php>

Energy Issues – Non-US

Strangling Shale Gas In Europe

By Alan Riely, WSJ, Via GWPF, Dec 6, 2013

<http://www.thegwgf.org/strangling-shale-gas-europe/>

The energy imperative

By Martin Livermore, The Scientific Alliance, Dec 6, 2013

<http://scientific-alliance.org/scientific-alliance-newsletter/energy-imperative>

Europe's energy price headache becoming a migraine – IEA

By Barbara Lewis, Reuters, Nov 29, 2013 [H/t GWPF]

<http://www.reuters.com/article/2013/11/29/eu-energy-price-idUSL5N0JE2OK20131129>

2013's Best News for U.S. Shale Gas Comes From...

By Dave Forest, Real Clear Energy, Dec 6, 2013

http://www.realclearenergy.org/articles/2013/12/06/2013s_best_news_for_us_shale_gas_107392.html

The Importance of ROI

By Donn Dears, Power for USA, Dec 3, 2013

<http://dddusmma.wordpress.com/2013/12/03/the-importance-of-roi/>

Energy Issues -- US

Most Renewable Growth Is in Wind

Editorial, Real Clear Energy, Dec 5, 2013 [H/t Cooler Heads]

http://www.realclearenergy.org/charticles/2013/12/05/most_renewalbe_growth_in_wind_107389.html

Almost all the growth in renewable energy over the last five years has been in wind capacity.

Power struggle: Green energy versus a grid that's not ready

Minders of a fragile national power grid say the rush to renewable energy might actually make it harder to keep the lights on.

By Evan Halper, LA Times, Dec 2, 2013

<http://www.latimes.com/nation/la-na-grid-renewables-20131203,0,1019786.story#axzz2mQ824N10>

More Bankruptcies Just Mark of 'Success' for Dept. of Energy

By Paul Chesser, NL&PC, Dec 4, 2013

<http://nlpc.org/stories/2013/12/03/more-bankruptcies-just-mark-success-dept-energy>

Washington's Control of Energy

Pipeline or Not, Lots of Canadian Crude Oil is Headed to the US

By Marita Noon, Energy Tribune, Dec 2, 2013

<http://www.energytribune.com/79841/pipeline-or-not-lots-of-canadian-crude-oil-is-headed-to-the-us-2#sthash.RmV6dLMP.dpbs>

Billionaire 'absolutely' wants to sway Keystone XL decision

By Laura Barron-Lopez, The Hill, Dec 2, 2013

<http://thehill.com/blogs/ballot-box/191774-billionaire-absolutely-wants-to-sway-keystone-decision>

Federal Agencies Threaten Fracking

By Staff Writers, NCPA, Dec 6, 2013

http://www.ncpa.org/sub/dpd/index.php?Article_ID=23887&utm_source=newsletter&utm_medium=email&utm_campaign=DPD

Link to report: Protecting the States' Ability to Regulate Fracking

By Nicolas Loris, Heritage Foundation, Nov 19, 2013

<http://www.heritage.org/research/reports/2013/11/protecting-the-states-ability-to-regulate-fracking>

Oil and Natural Gas – the Future or the Past?

Energy's future lies waiting in sea ice

By Sean Cockerham, Santa Fe News, Nov 30, 2013 [H/t GWPF]

http://www.santafenewmexican.com/news/energy-s-future-lies-waiting-in-sea-ice/article_855487f4-d414-5f17-8480-65ab0e696945.html

The Texas Hockey Stick: Charting The Lone Star Oil Boom

By Kathleen Hartnett-White and Vance Ginn, IBD, Dec 6, 2013

<http://news.investors.com/ibd-editorials-viewpoint/120613-682109-texas-oil-production-up-141-percent-over-january-2009.htm?p=full>

Nuclear Energy and Fears

Nuclear Power: Our High Costs Benefits! (Bastiat, call your office) c

By Roy Cardato, Master Resource, Dec 4, 2013

<http://www.masterresource.org/2013/12/nuclear-high-costs-are-not-good/#more-28685>

Alternative, Green (“Clean”) Solar and Wind

Wind turbines trash the landscape for the benefit of billionaires

Energy policy is chaotic and incoherent. The myth that wind power is 'free' has driven Britain's politicians mad

By Simon Jenkins, Guardian, UK, Dec 5, 2013 [H/t GWPF]

<http://www.theguardian.com/commentisfree/2013/dec/06/wind-turbines-landscape-billionaires-energy-policy>

[SEPP Comment: Mad may not be the correct term for the behavior of opportunistic politicians capitalizing on voter ignorance.]

Atlantic Array: Victim of Chaotic EU and UK Energy Policies

By Peter Glover, Energy Tribune, Dec 2, 2013

<http://www.energytribune.com/79839/atlantic-array-victim-of-chaotic-eu-and-uk-energy-policies#sthash.Yybm7YWL.dpbs>

[SEPP Comment: More likely due to terrible economics that voters can no longer tolerate subsidizing.]

Ohio's Blue Creek Wind Farm: Predictable Underperformance

By Jerry Graf, Master Resource, Dec 3, 2013

<http://www.masterresource.org/2013/12/ohio-blue-creek-wind-underperformance/#more-28661>

[SEPP Comment: Contains useful data.]

Feds finalize eagle death permit rule

By Julian Hatter, The Hill, Dec 6, 2013

<http://thehill.com/blogs/regwatch/energy-environment/192307-feds-finalize-eagle-death-permit-rule>

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

Dem lawmaker Welch rides anti-ethanol bike

By Julian Hatter, The Hill, Dec 5, 2013

<http://thehill.com/blogs/regwatch/energy-environment/192258-dem-lawmaker-rides-anti-ethanol-bike>

Ethanol cutbacks give U.S. consumers a break

By Jim Hillibish, Wicked, Dec 6, 2013

<http://www.wickedlocal.com/medfield/columnists/x1275648788/Jim-Hillibish-Ethanol-cutbacks-give-U-S-consumers-a-break>

Team reports on US trials of bioenergy grasses

By Diana Yates, Life Sciences Editor for UI News, Champaign IL (SPX), Dec 06, 2013

http://www.biofueldaily.com/reports/Team_reports_on_US_trials_of_bioenergy_grasses_999.html
[SEPP Comment: Maybe one day?]

Carbon Schemes

Earth's crust beneath oceans could store centuries' output of CO2

By Staff Writers, Southampton, England (UPI), Dec 4, 2013

http://www.terraily.com/reports/Earths_crust_beneath_oceans_could_store_centuries_output_of_CO2_999.html

Health, Energy, and Climate

Climate Change Isn't Our Top Public Health Threat

Editorial, IBD, Dec 4, 2013 [H/t Timothy Wise]

<http://news.investors.com/ibd-editorials/120413-681735-mccarthy-wrong-global-warming-not-urgent-health-threat.htm>

Environmental Industry

Green Opposition To Converting Soviet Nuclear Stockpiles Is Dangerous

By Bernard Weinstein, IBD, Dec 3, 2013

<http://news.investors.com/ibd-editorials-perspective/120313-681506-greens-oppose-converting-soviet-plutonium-stockpiles.htm?p=full>

Other Scientific News

A living desert underground

By Staff Writers, Tucson AZ (SPX), Dec 05, 2013

http://www.terraily.com/reports/A_living_desert_underground_999.html

Link to paper: Making a living while starving in the dark: metagenomic insights into the energy dynamics of a carbonate cave

By Ortiz, et al, ISME, Sep 12, 2013

<http://www.nature.com/ismej/journal/vaop/ncurrent/abs/ismej2013159a.html>

[SEPP Comment: Even in an arid cave, life finds a way to convert CO2 into food.]

Private launch of geostationary satellite a 'game-changer'

NASA no longer has a monopoly on US geosynchronous orbit launches

By Anthony Watts, WUWT, Dec 3, 2013

<http://wattsupwiththat.com/2013/12/03/private-launch-of-geostationary-satellite-a-game-changer/>

[SEPP Comment: Though a long time in coming, it was envisioned that private entities would replace a large portion of government space programs.]

X-37B Marks One Year On Orbit

By Morris Jones, Sydney, Australia (SPX), Dec 04, 2013

http://www.spacewar.com/reports/X_37B_Marks_One_Year_On_Orbit_999.html

[SEPP Comment: Speculating on the purpose of the X-37B.]

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BELOW THE BOTTOM LINE:

Companies could make the switch to wood power

By Staff Writers, Philadelphia PA(SPX), Dec 06, 2013

[http://www.biofueldaily.com/reports/Companies could make the switch to wood power 999.html](http://www.biofueldaily.com/reports/Companies_could_make_the_switch_to_wood_power_999.html)

[SEPP Comment: Time to cut down the forests.]

Diseases on the move because of climate change

Coccidioides is a fungus that lives in the soil in the southwestern United States. It can cause a respiratory infection known as Valley Fever or "cocci." Cases increased tenfold from 1998 to 2011.

Elizabeth Weise, USA Today, Dec 5, 2013

<http://www.usatoday.com/story/news/nation/2013/12/04/climate-change-disease/2623863/>

[SEPP Comment: More likely an increase in population living in the desert and an increase in diagnosis, than climate change.]

Reef fish find it's too hot to swim

By Staff Writers, Cairns,, Australia (SPX), Dec 05, 2013

[http://www.terradaily.com/reports/Reef fish find its too hot to swim 999.html](http://www.terradaily.com/reports/Reef_fish_find_its_too_hot_to_swim_999.html)

Storing carbon in the Arctic

By Jennifer Chu, MIT News, Boston MA (SPX), Dec 06, 2013

[http://www.spacedaily.com/reports/Storing carbon in the Arctic 999.html](http://www.spacedaily.com/reports/Storing_carbon_in_the_Arctic_999.html)

Tracking fracking pollution

By Staff Writers, Montreal, Canada (SPX), Dec 06, 2013

[http://www.energy-daily.com/reports/Tracking fracking pollution 999.html](http://www.energy-daily.com/reports/Tracking_fracking_pollution_999.html)

[SEPP Comment: The race horse has won, now the professors want to study the nearby pasture?]

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ARTICLES:

1. In Fracking, Sand Is the New Gold

Energy Boom Fuels Demand for Key Ingredient Used in Drilling Wells; 100 Sand Mines in Wisconsin

By Alison Sider and Kristin Jones, WSJ, Dec 2, 2013

[http://online.wsj.com/news/articles/SB10001424052702304868404579194250973656942?mod=WSJ Energy 2 4 Right](http://online.wsj.com/news/articles/SB10001424052702304868404579194250973656942?mod=WSJ_Energy_2_4_Right)

The race to drill for oil in the U.S. is creating another boom—in sand, a key ingredient in fracking.

Energy companies are expected to use 56.3 billion pounds of sand this year, blasting it down oil and natural gas wells to help crack rocks and allow fuel to flow out. Sand use has increased 25% since 2011, according to the consulting firm PacWest, which expects a further 20% rise over the next two years.

In Wisconsin, the source of white sand perfectly suited for hydraulic fracturing, state officials now estimate more than 100 sand mines, loading, and processing facilities have received permits, up from just five sand mines and five processing plants operating in 2010.

And the stocks of publicly traded companies that deal in sand have soared. Shares of Houston-based Hi-Crush Partners LP have jumped 59% since it began trading in August 2012. Shares of U.S. Silica Holdings Inc. based in Frederick, Md., have doubled since it went public in 2012, giving it a stock market value of \$1.9 billion.

Less than a decade ago, U.S. Silica focused on sand for industrial and consumer products—plate glass for windows and, more recently, glass for iPhone and iPad screens. Now those uses account for just half the sand the company digs out of its open pits and even less of revenue.

During the first nine months of this year, the more than \$245 million in sand sold to energy companies accounted for 62% of U.S. Silica's sales, up from 53% during the same period in 2012 and 33% during the first nine months of 2011.

Hydraulic fracturing is the process of pumping a mixture of sand, chemicals and water down a well at high pressure to break up dense rock formations so that oil and gas can flow to the surface. The sand left behind in the fracking process props open those tiny pathways so trapped fossil fuels can escape.

Railroad operators are carrying boxcars filled with sand to shale fields including the Permian Basin of West Texas and New Mexico, the Bakken formation of North Dakota and the Marcellus Shale of Pennsylvania.

While some of these places might seem to have plenty of sand of their own available, many fracking outfits prefer Wisconsin white sand, which is bigger and has rounder grains better suited for holding open larger pathways.

Union Pacific Railroad shipped 94,000 railcars of frack sand in the first half of the year—a 20% increase over the same period of 2012.

Canadian National Railway Co. is spending \$68 million over three years to upgrade and restore more than 100 miles of track in Wisconsin so it can boost sand shipments out of state.

U.S. Silica and BNSF Railroad are building a sand distribution hub south of San Antonio, at the edge of the oil-rich Eagle Ford shale. U.S. Silica will ship more than 1 billion pounds of sand each year there from Ottawa, Ill., 85 miles southwest of Chicago, and Sparta, Wis., about 250 miles to the north.

"It takes 25 railcars of sand, on average, to frack one well," said Bryan Shinn, U.S. Silica's chief executive.

Companies are starting to experiment with using even more sand. Pumping 8 million pounds of sand into a well instead of the more typical 4 million pounds could add around \$600,000 to the cost of an oil well, but in some cases can double its output, said Wells Fargo analyst Matt Conlan.

Demand for sand was so high last year that prices hit an average \$75 per metric ton. The new mining boom in Wisconsin has helped push those prices back to about \$50 at the mine, according to PacWest.

Oil-service companies that fracture wells mark up the sand and add transportation costs to the final bill, which can triple the price of sand paid by operators.

That has shale-oil producers like EOG Resources Inc. getting deeper into sand as a way to keep its costs per well in check. At the end of 2011, the company opened a plant in Chippewa Falls, Wis., about 100 miles east of Minneapolis, Minn., to process sand from mines it operates.

Prepping sand to be used in fracking involves sifting it for the right-sized crystals, separating out contaminants, washing it and drying it.

But the sand boom is creating worries about worker safety as well as local opposition over the clouds of airborne dust from heavy-duty trucks hauling the sand from mines to processing plants and rail depots. Pattison Sand Co. in Clayton, Iowa, has faced particular scrutiny.

The U.S. Centers for Disease Control and Prevention calls the fine granules unleashed from sand mining respirable crystalline silica—or silica dust—and says it is linked to silicosis and lung cancer.

"There's a tendency to say it's just dust and people have always been exposed to dust," said David Kriebel, an epidemiologist at the University of Massachusetts. "Crystalline silica is an extremely hazardous substance. Every little piece of crystalline silica that reaches the lungs causes scarring."

In Trempealeau County, Wis., where a number of new sand mines have opened, officials recently imposed a one-year ban on issuing new permits.

"We were looking at hundreds of permits being taken out, dozens of proposed mines that could become operational within a year," said Sally Miller, a member of the county's board of supervisors. "I didn't want us to be 20 years from now saying we wish we had known."

Even so, some state lawmakers worry a much needed job-creating sector is under threat, and hope to shift regulatory control to the state.

"We've always paid out to the oil producing states," said Sen. Tom Tiffany, a Republican. "To have the oil producing states pay us for our natural resources is really a good

2. Moving Crude by Railcar Stalls on the Track

Heightened Safety Concerns, Slow Permit Approval Hinder Some Firms' Efforts

By Alison Sider, WSJ, Dec 5, 2013

http://online.wsj.com/news/articles/SB10001424052702303332904579224000594400852?mod=WSJ_Energy

Companies that thought they had found a relatively easy way to move crude from the booming oil fields of North Dakota to the West Coast are encountering obstacles.

Half a dozen companies are trying to build rail terminals on the coast of Washington state to receive trainloads of crude from the Bakken field in North Dakota. The oil would then be transferred to ships and barges that could carry it to refineries in the Pacific Northwest or south to California.

Analysts say regulatory hurdles make it difficult to build the necessary rail yards and tank farms in California, and it's more expensive to ship crude there. But getting a permit in Washington is proving more challenging than companies expected.

Targa Resources Partners LP recently called off plans to build a new crude-oil tank farm and rail yard at the Port of Tacoma, saying it was "unable to identify an economical path forward." The company, which didn't return requests for comment, applied earlier this year to get a permit from a regional clean-air agency that would allow it to ship crude by barge from its existing facility at the port, but that is still being reviewed.

Black tank cars used to transport crude oil are parked among other rail traffic in Tacoma, Wash. Associated Press

And in the wake of this summer's train derailment in Quebec that killed 47 people, some groups are vowing to stop projects that would increase the number of oil trains rumbling through communities.

"The whole enterprise raises serious concerns about the heightened risk of transporting crude by rail," said Devorah Ancel, a staff attorney for the Sierra Club, an environmental advocacy group that has opposed some of the crude-by-rail projects at Washington ports.

Companies that want to transport crude by rail say the risks are minimal, and the rewards are great. Refiners have said shipping crude by rail from North Dakota to Washington is a bargain at as little as \$10 a barrel, compared with \$13 to \$16 for a barrel of crude to travel by rail to California and \$16 to ship a barrel to the East Coast.

Bakken oil production has soared in recent years but pipeline capacity hasn't kept pace, so energy companies are increasingly relying on railroads. Some refiners with plants in Washington, such as Phillips 66 BP PLC and Tesoro Corp., have built or received permits to build the infrastructure they need to unload more crude from railcars.

But projects planned for some of the state's ports, where oil would be unloaded from trains, stored in tanks, and transferred to barges, have attracted criticism. A state hearing board recently overruled the City of Hoquiam, southwest of Seattle, which had issued permits to expand two terminals at the Port of Grays Harbor, west of Tacoma, to handle crude.

Westway Terminals, which already stores methanol at the port, wants to add tanks and a rail connection so its terminal can handle as much as 9.6 million barrels of crude a year. Imperium Renewables Inc., which makes biodiesel from vegetable oil at a plant at Grays Harbor, plans to expand so its terminal will be able to store and ship crude oil, jet fuel and gasoline.

The Quinault Indian Nation and conservation groups had challenged those permits; the state board said the companies need to provide more information about how a possible third terminal

proposed by U.S. Development Group LLC, which is under consideration, would affect rail and marine traffic.

John Plaza, Imperium's CEO, said the company disagrees that "any proposed project at another site—anyone who can imagine doing something—provides the basis for denying our permit." Both Imperium and Westway say they will continue to push for permits, while opponents say they will challenge them.

The prospects for crude-by-rail expansions are even worse in California, where there is opposition to "introducing new oil or gas or anything that has a reputation for being unclean," said Sam Margolin, an analyst at Cowen & Co.

Valero Energy Corp., the largest U.S. refiner, had hoped to receive permits by year-end to add rail unloading equipment at its refinery outside of San Francisco. But the company has said the project has been pushed back to the end of 2014 or the beginning of 2015 because of permitting delays.

Phillips 66 has applied for a permit to extend a rail connection at its Santa Maria refinery in southern California, and to construct a railcar unloading facility there so the plant can bring in more North American oil.

The company hopes to start construction on the project next year and having the rail connection up and running in 2015. Dennis Nuss, a spokesman for the company, said Phillips 66 is working with the county to get the permits it needs and to quell local concerns about safety.

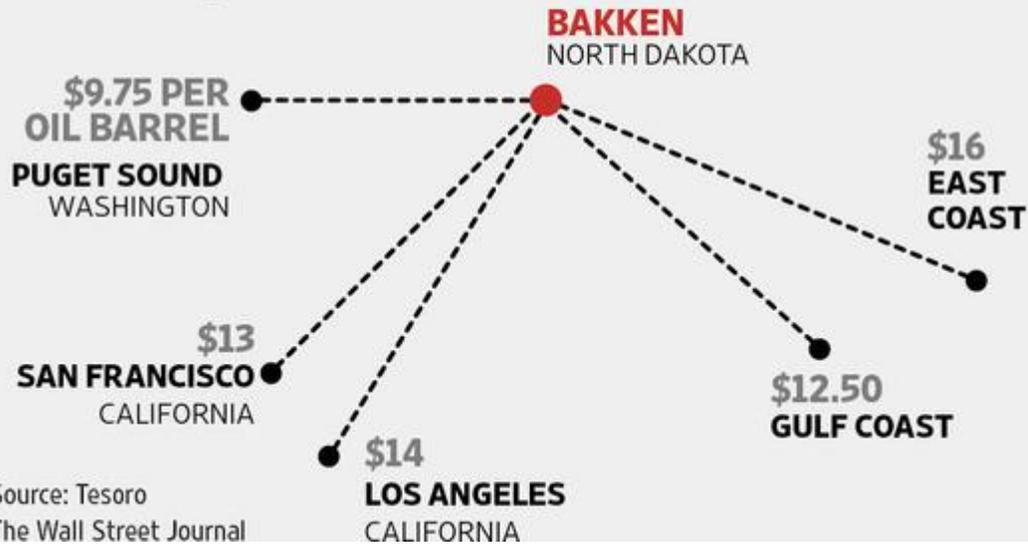
In Washington, Tesoro has pinned its hopes to plans for a terminal that would be able to handle deliveries of as many as 280,000 barrels of crude oil a day at the Port of Vancouver. From there it is a short barge ride down to its refinery near San Francisco.

The company said it is optimistic that the \$100 million terminal, a joint venture with logistics firm Savage Companies will get Washington Gov. Jay Inslee's approval and could be up and running late next year. Kelly Flint, general counsel for Savage, said the company is confident that it can usher the project through the state's one-year permitting process without delays.

Mr. Flint said the company didn't settle on Washington to avoid California regulations, but chose the Port of Vancouver because of its advantages. "It can service a number of refineries, it is the closest deep water port to the Midwest oil fields by rail," he said. "The rail infrastructure there is great."

Rail Delivery

Cost to transport a barrel of oil via train from the Bakken oil field to different U.S. regions:



Source: Tesoro
The Wall Street Journal

