

The Week That Was (Aug 29, 2009) brought to you by SEPP

Quote of the Week:

It is an adage in the field of mathematical modeling that all models are wrong, but some models are useful -- *George Box*

THIS WEEK

<<http://articles.latimes.com/2009/may/13/nation/na-epa-warming13>>

The Environmental Protection Agency suppressed an internal report that was skeptical of claims about global warming, including whether carbon dioxide must be strictly regulated by the federal government, according to a series of newly disclosed e-mail messages. Less than two weeks before the agency formally submitted its pro-regulation recommendation to the White House, an EPA center director quashed a 98-page report that warned against making hasty "decisions based on a scientific hypothesis that does not appear to explain most of the available data."

The U.S. **Chamber of Commerce** has now filed a 21-page petition with EPA, asking the agency to approve an On-the-Record proceeding with an independent trier of fact, who would allow EPA and environmental and business groups to engage in a "credible weighing" of the scientific evidence that global warming endangers human health. If EPA denies the chamber's petition for **climate science debate**, the 3-million-member business group would have 60 days to challenge the decision.

<<http://www.uschamber.com/assets/env/uscocpetendangerment.pdf>>

The **Geological Society of America** has just issued a new Draft Statement on Climate Change. (See *GSA Today* Sept 2009 and www.geosociety.org/positions/) GSA members are invited to comment by Sept 21.

The Statement endorses the **IPCC** conclusions on anthropogenic global warming (AGW), tries to provide a 'scientific rationale,' and recommends an activist program. It also furnishes a one-sided, rather selective list of references. We believe that the Statement is flawed and should be scrapped -- and replaced with one that has a sound scientific basis. We note that the NIPCC reports, which are based on the analysis of similar peer-reviewed research publications, reach conclusions that are diametrically opposed to those of the IPCC and the proposed GSA Statement. **NIPCC** concludes that **Nature, not human activity**, has been responsible for observed climate changes and that **CO2 is not a pollutant**. See www.NIPCCreport.org and NIPCC findings: CO2 is not a pollutant: http://sepp.org/Archive/NewSEPP/NIPCC_Findings.pdf

SEPP Science Editorial #27-2009 (8/29/09)

“Sun spot frequency has an unexpectedly strong influence on cloud formation and precipitation”

Climate modelers seem puzzled that small fluctuations in total solar irradiance (TSI) appear to have large influence on the climate. They feel it necessary to take recourse to complicated mechanisms. For example, Gerald **Meehl** of the US-National Center for Atmospheric Research (NCAR) and his team [1] have been able to calculate how the extremely small variations in TSI bring about a comparatively significant change in the system "Atmosphere-Ocean" They try to explain how 'sunspot frequency' has an unexpectedly strong influence on cloud formation and precipitation, according to a press release from the GFZ (German Research Centre for Geosciences), the home of Katja Matthes, a co-author of the study. One suggested mechanism is a solar-UV enhancement of stratospheric ozone, leading to circulation changes in the troposphere, a possibility explored earlier by British researcher Joanna Haigh. Another complicated mechanism suggested is increased heating and evaporation from cloud-free regions of the ocean, with the additional moisture transported into the equatorial zone, followed by some kind of positive feedback.

But the answer may really be very simple: the tiny (~0.1%) variation of TSI during the solar cycle is only the 'tip of the iceberg.' The much stronger variability is that of solar activity (solar wind and magnetic fields), which explains the observed modulation of Galactic Cosmic Radiation (GCR); in turn, the GCR affect cloudiness in the lower troposphere (the '**Svensmark** mechanism'). And what makes me so sure

about the GCR hypothesis? It is the observational evidence from isotopic data in stalagmites (shown in the NIPCC summary report [2] and used there to challenge the IPCC conclusions).

But the GCR explanation is not congenial to AGW alarmists, who have been brainwashed by the IPCC. The latest (2007) IPCC report ignores the cosmic-ray effects, and by focusing only on TSI, disingenuously considers solar influences on climate to be insignificant when compared to the forcing by GH gases.

In this sense then, the paper by Meehl et al constitutes some kind of conceptual breakthrough –even if it is not correct in all its conclusions. Professor Reinhard Huettl, Chairman of the Scientific Executive Board of the GFZ agrees: *"The study is important for comprehending the natural climatic variability, which - on different time scales - is significantly influenced by the sun. In order to better understand the anthropogenically induced climate change and to make more reliable future climate scenarios, it is very important to understand the underlying natural climatic variability."*

 1. Meehl, G.A., J.M. Arblaster, K. Matthes, F. Sassi, and H. van Loon (2009), Amplifying the Pacific climate system response to a small 11 year solar cycle forcing, *Science*, 325, 1114-1118.
 [We note that one of the coauthors is Harry **van Loon**, a pioneer in studies of solar influences on climate.]

2. NIPCC summary report *"Nature – Not Human Activity – Rules the Climate"*
http://www.sepp.org/publications/NIPCC_final.pdf

1. US Chamber of Commerce calls for adversary proceedings on EPA Endangerment Finding

2. EPA tries to bury the messenger

3. Climate Bill is built on 'Clean Coal' myths – Steven Milloy

4. Cap-and-Trade is refinery killer

5. The Earth is warming? Adjust the thermostat – John Tierney

6. Solar panel prices collapse

7. Ozone-friendly chemical said to be causing global warming

8. Better gas-to-methanol catalyst – Kevin Bullis

9. Carbon baron Al Gore – Lawrence Solomon

NEWS YOU CAN USE

<http://www.heritage.org/Research/EnergyandEnvironment/wm2585.cfm> August 19, 2009

Impact of the Waxman-Markey Climate Change Legislation on the States, *WebMemo #2585* by [David Kreutzer, Ph.D.](#), [Karen Campbell, Ph.D.](#), [William W. Beach](#), [Ben Lieberman](#) and [Nicolas Loris](#)

On June 26, the House of Representatives narrowly passed climate change legislation designed by Henry Waxman (D-CA) and Edward Markey (D-MA). The 1,427-page bill would restrict GH gas emissions from industry, mainly CO₂ from the combustion of coal, oil, and natural gas.

If passed by the Senate, the bill would become law and burden families with thousands of dollars per year in direct and indirect energy costs. According to [a new study](#) produced by Heritage's Center for Data Analysis (CDA), severe consequences include crushing energy costs, millions of jobs lost and falling household income.

Inevitably the bill will affect each state differently. Some states are more energy-intensive than others and some rely a great deal on manufacturing to fuel its economy. Regardless, the costs in every state are significant with sharp increases in electricity and gasoline. Moreover, the projected losses in jobs and Gross

State Product (GSP) illustrate how each state's economy will be operating well under its potential because of the Waxman-Markey bill. What follows are 50 state-by-state breakouts of the impact the bill would have on jobs and the economy.

*“Three cheers for Jairam **Ramesh!** India at last has an environment minister who is willing and able to denounce the hypocrisy and immorality of the West in twisting the arms of India and China to curb their carbon emissions. As I have argued many times, this is a blatant attempt to prevent these countries from industrialising and achieving the standards of living of the West. For, until technological advances can allow alternative ‘green’ energy sources to compete with the fossil fuels, a call to put any curbs on carbon emissions is in fact to condemn their billions to continuing poverty.”*

--Deepak Lal, The Business Standard, 25 August 2009

<<http://www.business-standard.com/india/news/deepak-lal-spikingroad-to-copenhagen/367985/>>

The **American Chemical Society** continues to be roiled over AGW, with Letters pouring in to its *Chemical & Engineering News (C&EN)* Aug 24, 2009. Here is our Letter:

Readers who may be confused about the causes of climate change might want to read the Nongovernmental International Panel on Climate Change (NIPCC) summary report, "Nature, Not Human Activity, Rules the Climate" (www.sepp.org/publications/NIPCC_final.pdf). The title tells the story.

For those with stamina, I recommend looking at the full NIPCC report that I wrote with Craig Idso, "Climate Change Reconsidered: The 2009 Report of the Nongovernmental International Panel on Climate Change" (Chicago, The Heartland Institute, 2009). The full report is available online at nipccreport.org.

REACH overreaches: An urgent review of European legislation supporting the biggest ever investment into consumer safety is called for in an Opinion article in *Nature* this week. REACH (Registration, Evaluation, Authorisation and Restriction of Chemicals) aims to determine the toxicity of the tens of thousands of existing chemicals that predate the era of mandatory testing of new products. But the number of chemicals that have been pre-registered for REACH by industry vastly exceeds expectations.

REACH came into force two years ago. A new analysis from toxicologists Thomas Hartung and Costanza Rovida shows that compliance with the legislation may use 20 times more animals and cost 6 times as much as previously estimated.

Access the article free online for one week

<http://links.ealart.nature.com/ctt?kn=6&m=33936898&r=MTc3MDI5MzIzOAS2&b=2&j=NTcyNDkwNTUS1&mt=1&rt=0>

Thanks to Robert **Chouinard**, we just learned a new word from <http://www.aetherin.com/>: Hypocapnia And from his website <http://www3.telus.net/public/rrobbie/essay/home.html> we learned that CO2 is good for yr health but also that [Carbon Dioxide: a Cure for Male Impotence](#)

That should provide a slam-dunk argument for more CO2

BELOW THE BOTTOM LINE

'Peak Oil' Is a Waste of Energy, by MICHAEL LYNCH: “A careful examination of the facts shows that most arguments about the theory of peak oil are based on anecdotal information, vague references and ignorance of how the oil industry operates. <http://www.nytimes.com/2009/08/25/opinion/25lynch.html?th&emc=th>

The AGU's house journal *Eos* (Aug. 18, 2009) reported on a Workshop/symposium on the **Medieval Warm Period**. Nothing much there, except they kept referring to the MWP as the MCA (which, I found, stands for Medieval Climate Anomaly). Oh well, they still kept the term ‘Little Ice Age’

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1. US CHAMBER OF COMMERCE CALLS FOR ADVERSARY PROCEEDINGS ON EPA ENDANGERMENT FINDING

The nation's largest business lobby wants to put the science of global warming on trial. The EPA's proposed [Endangerment] finding has drawn more than 300,000 public comments. Many of them question scientists' projections that rising temperatures will lead to increased mortality rates, harmful pollution and extreme weather events such as hurricanes. In light of those comments, the Chamber will tell the EPA in a filing today that a trial-style public hearing, which is allowed under the law but nearly unprecedented on this scale, is the only way to "make a fully informed, transparent decision with scientific integrity based on the actual record of the science." --*Jim Tankersley, Los Angeles Times, 25 August 2009*

<<http://www.latimes.com/news/nationworld/nation/la-na-climate-trial25-2009aug25.0.901567.story>>

"If EPA is truly committed to scientific integrity and transparency, then now is the time to prove it. In the circumstances here, those principles require the Agency to agree to resolve the Proposed Endangerment Finding on the record, rather than by an informal policy and political process. The Agency, and the Nation, would be better served by doing so. Accordingly, the Chamber hereby petitions the United States Environmental Protection Agency to resolve its Proposed Endangerment Finding solely on the record of the scientific evidence." –US Chamber of Commerce, June 23, 2009

<http://www.uschamber.com/co2/default>

The Alliance for Clear Climate Economics and Science Solutions (ACCESS) was created to ensure that any regulation of greenhouse gases using existing environmental laws not harm the economy and American jobs, be based on sound science and allow for public review of all underlying data and scientific analysis.

On June 23, 2009, the Chamber filed a Petition for a Formal "On the Record" Endangerment Finding using Administrative Procedure Act §§ 556 and 557. The Chamber also filed extensive written comments in response to EPA's proposed endangerment finding for motor vehicles, analyzing the scientific, legal and policy grounds EPA has set forth for making such a finding.

Petition (PDF)

<<http://www.uschamber.com/NR/rdonlyres/ekngxi7x62z4t4cmvi3abtysipk5a4tcnde4kbcaeqvqmb4pywfc2wq5vfyayebgdu3hmkazghand2phuhxyyqtqane/USCOCPetitionJune232009.pdf>>

Declaration of George T. Wolff, Ph.D (PDF)

<<http://www.uschamber.com/NR/rdonlyres/ek6oyhw7xb7qwjpunqyn5aoaagupbc6ltbhcn64krw72mqjnbe2jkj35lapz5jdnjnr2h64hf6gmqdbex5abeikt53h/20090622DeclarationofGeorgeWolffFinalwithAttachmentA.pdf>>

Download the Chamber's written comments on endangerment here:

<<http://www.uschamber.com/NR/rdonlyres/e2zc6jmcig3r2fjf573xf7h2rneeqw3dhujjzbene3k3xp7gkjaafbzo gwslxdg6bqmcymrta335sc7yyf5txw7lrwb/endangermentcomments.PDF>>

Executive Summary and Legal Analysis (PDF)

<<http://www.uschamber.com/NR/rdonlyres/e2zc6jmcig3r2fjf573xf7h2rneeqw3dhujjzbene3k3xp7gkjaafbzo gwslxdg6bqmcymrta335sc7yyf5txw7lrwb/endangermentcomments.PDF>>

Appendix:

Attachment 1: Detailed Review of EPA's Health and Welfare Scientific Evidence(PDF)

<<http://www.uschamber.com/NR/rdonlyres/emvk2apwc4xcru4vdoj2zibkk73ugrht3tzkzpr2c4q3fko5zl6chn efdtqsumbuf5xejxtya5hjt5fvouevhsbpg/attachment1.PDF>>

Attachment 2: CARA LLC study on flaws in EPA's air quality models (PDF)

<<http://www.uschamber.com/NR/rdonlyres/ewfsyhnrrn6hmrgt4kawh5ah3mdhkfx344bxio2hggfilayixxkplm eaojpaudsszmr5nke2lm6iwtxidveouauqorb/attachment2.PDF>>

Attachment 3: Cambridge Environmental memo on errors in EPA databases (PDF)

<<http://www.uschamber.com/NR/rdonlyres/e7m2a4kbhtymk2pcrxspbuvsymlgdmwfk26mcjb5hvgkxu72xh>>

[lr5c6el4vddcfx64wz5midg62eovr7cr674cv3bda/attachment3.PDF](http://www.uschamber.com/NR/rdonlyres/eqtty5ey7ae444bmmjapmgahyxbaod2d5jjx3pk5xubyrnna36o22uhp6wn5ecqgo6ldk67niqk35rri5uc3gcmkyg/attachment4.PDF)>

Attachment 4: FOIA request on interagency documents discovered on the docket that contradict EPA's proposed finding (PDF)

<<http://www.uschamber.com/NR/rdonlyres/eqtty5ey7ae444bmmjapmgahyxbaod2d5jjx3pk5xubyrnna36o22uhp6wn5ecqgo6ldk67niqk35rri5uc3gcmkyg/attachment4.PDF>>

2. BURY THE MESSENGER

The Washington Times, August 25, 2009 EDITORIAL:

<http://washingtontimes.com/news/2009/aug/25/bury-the-messenger/print/>

If you can't muzzle the whistleblower, try to marginalize him. That seems to be the strategy of the Obama administration, which is showing that its commitment to liberal ideology trumps its pledge to foster open government.

In June, the Competitive Enterprise Institute made waves by releasing internal e-mails from the Environmental Protection Agency. In those messages, a top administrator told a key researcher that the researcher's new report would not be released. Why? Because it does "not help the legal or policy case" for a controversial decision to treat global warming as a health hazard. In short, because researcher Alan Carlin's conclusions differed from the administration's political agenda, his research was ignored.

Mr. Carlin, who holds a doctorate in economics with an undergraduate degree in physics, examined numerous studies on global warming. His scorching message to his political bosses at EPA: "I have become increasingly concerned that EPA has itself paid too little attention to the science of global warming. EPA and others have tended to accept the findings reached by outside groups... as being correct without a careful and critical examination." That examination shows, Mr. Carlin said, that "available observable data... invalidate the hypothesis" that humans cause serious global warming.

With the administration so heavily invested in a regulatory scheme to combat supposed warming, this message was far from welcome. Hence the effort to bury the report, an effort that was thwarted when Mr. Carlin posted the report on a personal Web site.

The administration struck back. Mr. Carlin works for the EPA's National Center for Environmental Economics. On Friday, Inside Washington Publishers reported that "Obama EPA officials are said to be considering scrapping" the center's role in scientific analysis. Never mind the reality that doing so would undermine the entire reason for its existence, namely (citing the article) "researching environmental health issues to improve risk assessment data used in economic analyses for [new regulatory] rules."

If the office can't analyze the science in order to determine a regulation's economic effects, it won't have any basis for figuring out those effects. Hiding scientific research is not what Americans expect from a president who boasted that his administration would "restore science to its rightful place." And for a president who promised to "strengthen whistleblower laws," this attempt to marginalize a true whistleblower smacks of insincerity. Its implications for economic and environmental policy are dangerous.

3. CLIMATE BILL IS BUILT ON 'CLEAN COAL' MYTHS

<http://www.ibdeditorials.com/IBDArticles.aspx?id=336090108235252>

By STEVEN MILLOY, August 25, 2009

The fate of the Waxman-Markey climate bill rests upon two myths about so-called "clean coal." The first is that coal, as used today in the U.S., is a dirty fuel. The other is that coal can be made "clean" by capturing carbon dioxide (CO₂) emissions from power plants and storing them underground in geologic repositories.

As to the first myth, if the chief concern about burning coal for electricity is limited to CO₂ emissions, then coal is already clean. CO₂ is a colorless, odorless, naturally occurring trace gas in the atmosphere that

humans exhale and plants need to grow. There is no direct evidence that humankind's comparatively minuscule CO₂ emissions predictably or discernibly affect the climate. Controversy surrounding the first myth has given rise to the second myth as a potential solution.

Some in the coal and electric-power industries are touting the second myth in hopes of being able to survive climate legislation with hard emission caps that may be enacted this fall. These groups are looking for time and taxpayer money to develop CO₂ capture and sequestration (CCS) technologies that would allow the continued use of coal in power plants. The Waxman-Markey bill that is now being considered in Congress would provide about \$60 billion for CCS technologies.

The problem, though, is that even if \$60 billion were enough money to implement CCS — and it's not by a long shot — it would make no difference to the atmosphere and climate, regardless of whether you believe the first myth.

Atmospheric levels of CO₂ are currently about 380 parts per million (ppm), as opposed to perhaps about 290 ppm around 1850. Based on this increase, we can reasonably estimate that about 40% of manmade CO₂ emissions since 1850 remain in the atmosphere, while the other 60% is transferred to oceans and the terrestrial biosphere.

In 2007, U.S. coal-fired power plants emitted about 2.4 billion metric tons of CO₂ into the atmosphere, meaning that about one billion metric tons of CO₂ remained in the atmosphere. Since each part per million of CO₂ in the atmosphere weighs about 7.81 billion metric tons, the annual accumulation of CO₂ in the atmosphere resulting from U.S. power-plant emissions is on the order of 0.12 ppm.

So if CCS were commenced immediately and continued until, say, the year 2100, that would avoid accumulation of atmospheric CO₂ by about 11 ppm — not exactly an earth-shaking amount. EPA scenarios forecast future CO₂ levels to rise to 500 to 700 ppm.

Using the climate models relied on by the U.N.'s Intergovernmental Panel on Climate Change that attempt to project atmospheric warming caused by CO₂, the theoretical amount of atmospheric warming avoided by CCS works out to between 0.045 to 0.15 degree Celsius avoided over the next 90 years. Again, this is hardly significant compared with the 0.7-degree increase we seem to have experienced since 1850.

But then, CCS cannot be implemented immediately and is not affordable on any significant scale in the first place. The most ambitious plans put the first commercial-scale CCS projects 10 years or more into the future.

In a presentation to the Society of Petroleum Engineers last March, energy expert Michael Economides estimated that CO₂ cuts on the order of the U.S.-shunned Kyoto Protocol would require the drilling of 161,429 injection wells by 2030 at a cost of \$1.61 trillion. That price tag doesn't include the cost of capturing the CO₂ at the point of generation, purchasing rights of way for pipelines, pipeline installation costs, and liability insurance. Power plants would have to use 30% more energy for CO₂ capture, transport and storage.

Economides says the total cost may be as high as \$1 trillion annually — without any guarantees that the CO₂ would stay sequestered. Importantly, the Kyoto Protocol requirement of a 7% reduction in CO₂ emissions from 1990 levels pales in comparison to that required by Waxman-Markey — an 83% reduction from 2005 levels.

For those who still hold dear the fantasy of CCS, it may serve to remember ill-fated Yucca Mountain, the almost 30-year-old project to develop a site for storing spent nuclear fuel from commercial power plants one mile under the Nevada desert. Despite tens of billions of dollars spent on site planning and engineering, Nevada NIMBY-ism and anti-nuclear power activists delayed the project long enough for the Obama administration to defund the project.

If the comparatively small Yucca Mountain project could not be made to happen, it's doubtful that hundreds, if not thousands, of miles of pipelines carrying pressurized CO₂ to much more uncertain underground entombment and possible environmental contamination will happen either.

The CCS myth has only served to derail the debate that needs to occur in Congress about the all-important first myth. Desperate coal and utility companies that rely on coal as fuel have advanced CCS in order to avoid a carbon-cap death penalty and to be perceived as environmentally progressive.

Energy-realistic politicians looking for an easy out on the climate issue are more than happy to dangle taxpayer money in front of the much-needed coal and utility industries to get them to the table for a quick-and-dirty deal. Some environmentalists — Al Gore, for one — are willing to pay lip service to the CCS concept just to get a bill passed and establish a beachhead for their political power grab.

But few in the climate debate have stopped to seriously consider the realities of CCS. Now is the time for that consideration so that Congress can decide how seriously it believes in the first myth and whether it is worth its universally recognized economic pain.

Milloy publishes JunkScience.com and is the author of "Green Hell: How Environmentalists Plan to Control Your Life and What You Can Do to Stop Them" (Regnery 2009)

4. CAP-AND-TRADE IS REFINERY KILLER

<http://www.ibdeditorials.com/IBDArticles.aspx?id=336089976159431>

By *INVESTOR'S BUSINESS DAILY*, August 25, 2009

A new study shows that Waxman-Markey will increase prices at the pump, deepen our dependence on foreign oil and shred our ability to turn crude into gasoline. Even fuel-efficient cars will still need fuel. Oil may bubble up out of the ground, but gasoline does not. It's made in those ugly little NIMBY places called refineries we are loath to build anymore because we're too busy trying to save the Earth rather than our economy and American jobs.

When Hurricane Katrina shut down 20% of our refining capacity in a single day and raised gas prices in a single week by 45 cents a gallon, it showed how stretched to capacity our refineries were and are. Throw in the requirement for boutique fuels that vary by season and location, and our vulnerability to disruption is immense.

The number of refineries and total capacity to produce gasoline in the U.S. peaked in 1981, with 324 refineries able to process 18.6 million barrels of crude oil a day. Today, with U.S. demand for oil more than 20% higher, refinery capacity is roughly 17% lower.

Refineries operate near full capacity in the summer, leaving the nation's fuel supply chain vulnerable to disruption. That was the case a year ago, when Hurricanes Gustav and Ike shut down most Gulf Coast refineries, and gas stations throughout the Southeast ran out of fuel.

With climate-change hype taking legislative form in HR 2454 and the Waxman-Markey cap-and-trade bill, and with fossil fuels on the endangered species list, not many in Washington seem concerned that Waxman-Markey, among its other costs to jobs and growth, will further endanger our gasoline supply.

In 1981, the U.S. had 324 refineries with a total capacity of processing 18.6 million barrels of crude a day. A study by global consulting firm EnSys Energy shows that Waxman-Markey would reduce that figure to 12.2 million barrels a day from its current production rate of 14.5 million from just 141 active refineries.

Without Waxman-Markey, U.S. production rates would grow to 16.4 million barrels a day. With it, not only will refinery production rates drop but utilization rates as well, from about 83% today to about 63.4% in 2030. The drop would have to be made up by foreign imports, the study finds, meaning the U.S. could end up relying on other countries for some 19% of its refined fuel, nearly twice the amount it imports today.

HR 2454 — which passed 219 to 212 on June 26, with the help of eight Republican congressmen — seemed to be aimed specifically at refineries.

Waxman-Markey is essentially a carbon tax on emissions. Companies will buy, sell and trade the emission permits. The bill also issues a fixed number of "allowances" for emissions, with companies paying for emissions they generate above those allowances. Refiners are held responsible under the bill for 44% of all emissions, including their own (about 4% of the total), as well as the consumer emissions from heating oil, planes, trains and automobiles, as well as other petroleum uses. Yet they are allocated only 2.25% of emission allowances.

Production at U.S. refineries would drop, while production at refineries in countries that do not limit emissions would rise. The U.S. Gulf Coast, which houses the nation's largest refining complex, would bear "the full brunt" of competition posed by foreign refiners and the impact of higher energy prices in the U.S., according to EnSys consultant Martin Tallett.

Prohibition banned the manufacture and sale of alcohol. Now we seem to be headed in the same direction with oil and gasoline. For the sake of our economic future, not only do we need to drill, baby, drill, but we also need to refine, baby, refine.

5. THE EARTH IS WARMING? ADJUST THE THERMOSTAT

By [JOHN TIERNEY](#), August 11, 2009

<http://www.nytimes.com/2009/08/11/science/11tier.html>

[President Obama](#) and the rest of the [Group of 8](#) leaders decreed last month that the planet's average temperature shall not rise more than 2 degrees Fahrenheit above today's level. But what if Mother [Earth](#) didn't get the memo? How do we stay cool in the future? Two options:

Plan A. Keep talking about the weather. This has been the preferred approach for the past two decades in Western Europe, where leaders like to promise one another that they will keep the globe cool by drastically reducing carbon emissions. Then, when their countries' emissions keep rising anyway, they convene to make new promises and swear that they really, really mean it this time.

Plan B. Do something about the weather. Originally called geo-engineering, this approach used to be dismissed as science fiction fantasies: cooling the planet with sun-blocking particles or shades; tinkering with clouds to make them more reflective; removing vast quantities of carbon from the atmosphere.

Today this approach goes by the slightly less grandiose name of climate engineering, and it is looking more practical. Several recent reviews of these ideas conclude that cooling the planet would be technically feasible and economically affordable.

6. SOLAR PANEL PRICES COLLAPSE

<http://www.nytimes.com/2009/08/27/business/energy-environment/27solar.html?hp>

Excerpts: Panel prices have fallen about 40 percent since the middle of last year, driven down partly by an increase in the supply of a crucial ingredient for panels, according to analysts at the investment bank Piper Jaffrey.

The price drops coupled with recently expanded federal incentives could shrink the time it takes solar panels to pay for themselves to 16 years, from 22 years, in places with high electricity costs, according to Glenn Harris, chief executive of [Sun Centric](#), a solar consulting group. That calculation does not include state rebates, which can sometimes improve the economics considerably.

A ton of production, mostly Chinese, has come online, said Chris Whitman, the president of U.S. Solar Finance, which helps arrange bank financing for solar projects.

At the same time, once-roaring global demand for solar panels has slowed, particularly in Europe, the largest solar market, where photovoltaic installations are forecast to fall by 26 percent this year compared with 2008, according to Emerging Energy Research, a consulting firm. Much of that drop can be attributed to a sharp slowdown in Spain. Faced with high unemployment and an economic crisis, Spain slashed its generous subsidy for the panels last year because it was costing too much.

7. OZONE-FRIENDLY CHEMICAL SAID TO BE CAUSING GLOBAL WARMING

Refrigerant chemicals that have replaced substances banned for allegedly harming the ozone layer are poised to become a major source of global warming, according to a study conducted by the Netherlands Environmental Assessment Agency (NOAA).

By the year 2050, hydrofluorocarbons (HFCs) -- which replaced chlorofluorocarbons (CFCs) banned by the Montreal Protocol -- may exacerbate carbon dioxide-related global warming by 19 percent, say researchers:

- o Since the Montreal Protocol took effect in 1989, HFCs have replaced CFCs as the chemicals of choice for refrigeration and air conditioning.
- o A decade later, there appears to be little difference in seasonal and annual fluctuations of the Earth's ozone layer, but the greater prevalence of HFCs has the NEAA worried about global warming.
- o Increased use and emission of HFCs could largely undo the climate benefits already achieved by the Montreal Protocol.

Environmental policy analysts echo these findings. According to H. Sterling Burnett, a senior fellow with the National Center for Policy Analysis:

- o The climatologists' opinion was we've got to stop using CFCs because they're affecting the ozone and increasing the greenhouse effect.
- o Yet we've replaced it with another chemical that is still a greenhouse gas; we've traded one greenhouse gas for another greenhouse gas.
- o Moreover, CFC was the original refrigerant and it was better than anything else on the market; it wasn't toxic to humans, it was a good insulator and it didn't seem to break up ozone layers over the cities where it is released.

According to environmental policy analyst Drew Thornley:

- o This latest research highlights the potential unintended consequences of government regulation, and it further supports the position that drastic measures to curb greenhouse-gas emissions are premature, insofar as research is ongoing and current questions remain unanswered and new questions emerge.
- o As an alternative to hasty, sweeping, climate-fighting mandates and regulations, a better approach is to take whatever time is necessary to continue important research and gather the information that will put us in a better position to protect the environment and consumers.

Source: Krystle Russin, "Ozone-Friendly Chemical Said to be Causing Global Warming," Heartland Institute, September 2009; based upon: Guus J. M. Velders et al., "The large contribution of projected HFC emissions to future climate forcing," Netherlands Environmental Assessment Agency, May 2009. http://www.heartland.org/publications/environment%20climate/article/25802/OzoneFriendly_Chemical_Said_to_Be_Causing_Global_Warming.html

8. BETTER GAS-TO-METHANOL CATALYST

An improved catalyst could reduce the cost of making methanol from methane.

By Kevin Bullis, MIT Technology Review, August 26, 2009

A new catalyst for converting methane, the main component of natural gas, into a liquid fuel--[methanol](#)--has been developed by researchers in Germany. The catalyst could make direct conversion of methane to methanol cheaper than it is with existing catalysts, but it will likely fall short of a holy grail of hydrocarbon chemistry--a catalyst that allows natural gas to replace petroleum fuels on a large scale.

The new catalyst is based on one of the few [catalysts that convert methane](#) directly to methanol, at low temperatures, without producing much carbon dioxide or other unwanted byproducts. That catalyst, developed by [Roy Periana](#), now a professor of chemistry at the Scripps Research Institute, proved too expensive to commercialize.

The new catalyst, described in the early online version of the journal [Angewandte Chemie](#), has "solved one of the main problems with Periana's catalyst," says [Ferdinand Schüth](#), director of the Max Planck Institute for Coal Research, who led the work. Because Periana's catalyst is a liquid dissolved in sulfuric acid, it's difficult to recycle, a serious problem because the catalyst requires the expensive metal platinum. The new catalyst is a solid, says Schüth, and so is much easier to recycle because it can be removed from the sulfuric acid simply with filters.

Schüth says the discovery of the solid catalyst was "serendipitous." His colleagues had developed a polymer with a molecular structure that he recognized was similar to Periana's catalyst. He was able to incorporate platinum into that structure and showed that the resulting solid catalyst performed as well as the liquid version.

Methane-based fuels could be significantly cleaner than petroleum ones. What's more, the supply of natural gas is vast, with large supplies now being accessed with new drilling techniques and orders of magnitude more potentially available in the form of [methane hydrates](#) at the bottom of the ocean. But because it is a gas, methane is more expensive to transport and less convenient for use in vehicles than liquid fuels, and so far chemical methods of converting it to a liquid have been costly.

While the new catalyst does solve one of the problems with the Periana catalyst, "it is by no means the biggest problem," says [Jay Labinger](#), faculty associate in chemistry at Caltech. Indeed, Periana says that the development of a solid version of his catalyst will not be enough to commercialize it. He is working on new catalysts that use the similar mechanisms but cheaper and more effective materials.

The two key issues are typical problems for experimental catalysts--they don't work fast enough, which increases the size and cost of equipment needed, and they don't produce high enough concentrations of the desired product, making it expensive to separate the product from other chemicals. Labinger estimates that the rates of the new German catalyst need to increase by an order of magnitude, and Periana says the concentrations need to increase three- to fivefold.

Periana suggests, however, that the German catalyst may offer new directions for research, especially if the mechanisms involved in producing the methanol are different from his liquid catalyst. Indeed, Schüth says that one key component of Periana's catalyst, chlorine, isn't necessary with the new form, suggesting it could work by different means. Meanwhile, he's also developing catalysts that use different materials. One is promising, he says, producing methanol at rates two times faster than Periana's liquid catalyst.

9. CARBON BARON GORE

By Lawrence Solomon, Financial Post, 26 August 2009

<<http://network.nationalpost.com/np/blogs/fpcomment/archive/2009/08/25/lawrence-solomon-carbon-baron-gore.aspx>>

At the turn of the 20th century, a period famous for its Robber Barons, John D. Rockefeller was making his

fortune in oil, Andrew Carnegie in steel, Cornelius Vanderbilt in railroads and J.P Morgan in finance. Many predict that the history books of the future, when listing the legendary fortunes made at the turn of the 21st century, will place Al Gore at the top of the list, as the first great Carbon Baron.

In 2000, when Al Gore lost his bid to become president of the United States, he had less than US\$2-million in assets. Neither was Gore known for his financial acumen - annual White House disclosures of his and Tipper Gore's joint tax filings showed little income beyond the \$175,000 he earned as vice-president.

To the contrary, Gore was a laughing stock in investment circles for his lack of financial sophistication, which, the press said, explained why Gore's net worth had been declining during the booming 1990s. Gore had failed to understand the significance of the new Internet economy that had so transformed the world. Instead "most of his money was in checking and passbook accounts or tied up in property," The New York Times reported, in an article entitled "Gore Has Not Bought Stocks for Decades." In an article entitled "Gore flunks investor test," Dow Jones' SmartMoney.Com mocked Gore for being irrationally risk averse, saying, "Al Gore's assets look more like 1899 than 1999. As things stand, the vice-president is without anything with a P/E, let alone an IPO: no stocks, no funds, not even a bond. What does he have? Land - as far as the eye can see. Oh, and a zinc mine he's leasing out to an Australian mining company." Fortune magazine went so far as to headline a 1998 story, "The Vice President's Financial Acumen 'Ain't Worth a Bucket of Warm Spit" Its verdict: "This is a family in dire need of a money manager."

Nobody doubts Gore's financial acumen now. Within eight years of leaving politics, Gore had reportedly become worth well in excess of US\$100-million. Many expect him to become a billionaire through his stakes in a global warming hedge fund, a carbon-offset business, a renewable energy investment business and other global warming related ventures. He is now money manager to institutional investors and the super rich through Generation Investment Management, a firm that he co-founded in 2004.

Neither does anyone anywhere any longer regard Gore as a timid investor, bereft of ambition. His goal for Generation Investment Management, as he described in 2008 to Fortune magazine, is to help drive a societal transformation that will be "bigger than the Industrial Revolution and significantly faster."

The Fortune interview explained his firm's intention to help orchestrate "a makeover of the US\$6-trillion global energy business," from coal plants and the internal-combustion engine to petrochemicals and even bottled water. "What we are going to have to put in place is a combination of the Manhattan Project, the Apollo project and the Marshall Plan, and scale it globally," Gore continued. "It'd be promising too much to say we can do it on our own, but we intend to do our part."

Gore's societal plan and his investment plan are indistinguishable and straightforward: He wants to make fossil fuels uncompetitive and renewable energy competitive by convincing governments to punishingly tax fossil-fuel technologies through mechanisms such as cap and trade. In the process, Gore intends to make money at every stage of this transformation - through his stake in the carbon trading markets being created, through his portfolio of renewable energy and other so-called clean-tech investments and by acting as a broker.

In amassing his fortune, Gore has not been operating in an unfamiliar business environment, as the early detractors of his investment acumen might imagine. Rather, he has been operating entirely in his element. He has always been a lobbyist for climate change legislation, whether as a senator or as vice-president, and he remains so in his new capacities. And in his capacity as a politician, he always needed to raise funds. This is the essential skill he brings to Generation Investment Management, where he today approaches old political allies for support: Gore asks well-heeled charitable foundations, endowments, corporations and pension funds to place their assets under the management of his firm. To do their bit for the environment, and for him, they oblige.

To date, Gore has done well for himself. As for the others, they know not to expect quick profits: Gore is clear in explaining that his focus is on long-term sustainable investments.

And as for Gore's prospects of becoming a billionaire, they rest entirely on one big bet: That government

legislation will create the mandates that his businesses need to boom. Without those mandates, his businesses - few of which are viable in a traditional free market economy - will go bust. As will the funds entrusted to him by the charities, endowments and pension funds seeking sustainable investments.

There is nothing unusual in furthering business interests through government mandates: Many of the Robber Barons of a century ago also relied on their ability to lobby for favourable government legislation. Where Gore departs from the Robber Barons of yesteryear is in the nature of the product being produced. Whatever else might be said of the Robber Barons, there was no disputing the value of the railroads, steel, oil and other commodities that they were producing. In the case of carbon dioxide, the basis of Gore's economy, rather than there being no dispute, there is no consensus that he isn't selling vapourware.

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