

The Week That Was: 2020-09-12 (September 12, 2020)

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The Science and Environmental Policy Project

Quote of the Week: *“An experiment is a question which science poses to Nature, and a measurement is the recording of Nature's answer.”* – Max Planck

Number of the Week: 10%

THIS WEEK:

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

Review of the Greenhouse Effect: For the past few weeks TWTW used presentations by William Happer to discuss the greenhouse effect, which is how certain gases interfere with the loss of electromagnetic energy, particularly in the infrared frequencies, from the surface of the earth into space. The gases that slow the loss of energy (heat), keeping the earth warmer at night than it would be otherwise, are known as greenhouse gases. Starting in 1859, physicist John Tyndall described their influence through a set of experiments. Tyndall recognized that water vapor is the dominant greenhouse gas, and without it land masses would freeze at night, making vegetative growth virtually impossible.

For over a century, additional experiments in many laboratories were used to further refine these calculations. Most greenhouse gases interfere with outgoing radiation in narrow ranges of wave lengths. However, water vapor influences a broad range of wavelengths. Thus, experiments in a laboratory using gases without water vapor may or may not be an actual reflection of what occurs in the atmosphere. Unfortunately, the highly influential 1979 Charney Report emphasized that a slight warming by CO₂ would cause a significant warming by water vapor, particularly over the tropics. Observations of the atmosphere have demonstrated that this is not correct. There is no significant amplification of warming from water vapor over the tropics.

As the concentration of a gas increases, its ability to cause a change in temperature diminishes; this is called "saturation," and it is accurate as well as convenient to represent the change by a logarithmic curve. In the case of CO₂, its importance begins to decline even below 100 parts per million (ppm), and at 400 ppm the influence of carbon dioxide (CO₂) is close to full saturation. – having little effect. Thus, enormous increases in CO₂ are needed to have even a minor influence on temperature.

Calculations by van Wijngaarten and Happer across the many absorption frequencies by H₂O, CO₂, CH₄ (methane) and N₂O (nitrous oxides) yield exceptionally good agreement with satellite-based temperature measurements. They showed that absorption by CH₄ and N₂O are both completely negligible, regardless of the fictional calculations of "Global Warming Potential" (GWP.)

Van Wijngaarten and Happer use the high-resolution transmission molecular absorption database (HITRAN), which simulates the transmission and emission of light in the atmosphere, to calculate the influence of a doubling of CO₂ and a 6% increase in water vapor in the atmosphere. They arrive at an upper bound of 1.5 degrees K (C), more likely to be around 1 degree C, which is significantly less than the lowest estimate by the UN Intergovernmental Panel on Climate Change

(IPCC) and its climate modelers. See link under Challenging the Orthodoxy and <https://hitran.org/about/>.

Review of Changing Climate: Since its publication on June 3, on several occasions TWTW has discussed a paper by Professor emeritus Richard Lindzen, “An oversimplified picture of the climate behavior based on a single process can lead to distorted conclusions.” Among various assertions that are generally agreed upon are:

1. The core of the system consists in two turbulent fluids (the atmosphere and oceans) interacting with each other.
2. The two fluids are on a rotating planet that is differentially heated by the sun. Solar rays directly hit the equator and skim the earth at the poles resulting in uneven heating, which drives the circulation of the atmosphere. The result is heat transport from the equator towards the poles (meridional).
3. The earth’s climate system is never in equilibrium.
4. In addition to the oceans, the atmosphere is interacting with a hugely irregular land surface distorting the airflow, causing planetary scale waves, which are generally not accurately described in climate models.
5. The two most important substances affecting climate today are water vapor and clouds.
6. Lindzen estimates that a doubling of CO₂ would result a less than 2% disturbance in the flow of energy into and out of the earth’s climate system, well within disturbances caused by changes in water vapor and clouds. This would result in a change in global temperature of at most 1 degree C, occurring mostly in the higher latitudes. The tropics are remarkably stable.

Further, as discussed in the August 29 TWTW, Ross McKittrick and John Christy have demonstrated that all the CMIP6 models to be used by the UN IPCC have a systematic warming bias, many greatly overestimating the warming of the atmosphere. The estimates of actual warming come from 12 different datasets, 4 using satellites, 4 using weather balloons, and 4 from weather reanalyzes. See links under Challenging the Orthodoxy.

When Whales Walked: The enormous body of evidence collected using modern instruments and methods shows that the climate modelers and the UN IPCC have greatly overestimated the warming caused by CO₂ and the consequences of such warming. Given that the modelers have received billions in funding from governments and that the UN hopes to receive \$100 billion per year to protect the earth from a dangerous warming that is not occurring, it is not surprising that the modelers will develop innovative ways to justify their erroneous claims.

Both *Science* and *Nature Communications*, advocacy publications, ran imaginative studies claiming to be able to calculate the sensitivity of the earth to increasing CO₂ by using data supposedly representing the earth’s climate and its sensitivity to CO₂ from tens of millions of years ago. To some readers, sensational headlines such as “Earth barreling toward ‘Hothouse’ state not seen in 50 million years, epic new climate record shows” indicate a lack of careful analysis.

Although the claimed time periods change with the publication, the studies focus on the Paleocene–Eocene Thermal Maximum (PETM), which is thought to have occurred about 55.5 million years ago. The papers use a lot of mathematics and mathematical tools to try to obtain patterns in irregular data in an effort to establish the sensitivity of the earth to changing CO₂ over millions of years. Without going into specifics, one can question the underlying assumption: the earth has been remarkably stable for 56 million years, since the beginning of the Eocene. As Lindzen stated (with additions by TWTW in boldface):

1. The core of the system consists in two turbulent fluids (the atmosphere and oceans) interacting with each other.
2. The two fluids are on a rotating planet that is differentially heated by the sun. Solar rays directly hit the equator and skim the earth at the poles resulting in uneven heating, which drives the circulation of the atmosphere. The result is heat transport from the equator towards the poles (meridional). – **Today, but not necessarily 56 million years ago.**
3. The earth’s climate system is never in equilibrium.
4. In addition to the oceans, the atmosphere is interacting with a hugely irregular land surface distorting the airflow, causing planetary scale waves, which are generally not accurately described in climate models. – **Have the land masses changed? Have they changed the flow of the two turbulent fluids?**

The 1990 book *The Ocean in Human Affairs*, edited by Fred Singer addresses a perplexing issue. What caused the earth to slip into its current period about 2.6 million years ago, the Quaternary, of about 100,000 year-long Ice Ages interrupted by brief warm periods of about 10,000 years?

Milankovitch cycles explain variation in the earth’s orbit and how this warming and cooling can cause variation in CO₂, but not why did periods of glaciation begin, especially in the Northern Hemisphere. Further, although alarmists use Milankovitch cycles they never ask: “How do the Milankovitch cycles cause changes in CO₂ without causing changes in temperature first?”

The book suggests an answer to the first question, but not to the second which remains unanswered. The closing of the Caribbean (or Central American) Seaway separating North and South America and connecting Atlantic and Pacific may have changed the ocean circulations to set up the thermohaline circulation resulting in a surface flow of the North Atlantic towards the Arctic from the Caribbean towards Norway (the Gulf Stream), resulting in periods of glaciation from the Milankovitch cycles. The closing of the Seaway may have occurred about three to five million years ago.

(A side note: The thermohaline circulation is caused by the fact that more water evaporates from the North Atlantic than falls on it, thereby increasing the salinity and density. The cold dense water in the Arctic therefore sinks, creating the circulation. A deep southward current in the western North Atlantic results in upwellings at the Grand Banks (Newfoundland) and Georges Bank (between Nova Scotia and Cape Cod) bringing nutrient- and CO₂-rich water near the surface, resulting in great increases in photosynthesis and waters generally rich with life.)

To assess how well these papers may address the role of CO₂ in the warm period 56 million years ago and how they relate to today's climate requires an understanding of major land features of the time, and how they may have changed the atmospheric and ocean currents. For this the paper in *Nature Communications* is particularly useful. It gives estimates of global mean temperature, from which Equilibrium Climate Sensitivity (ECS) is calculated. Figure 1 of the paper gives the paleo-location of sites used in the study on a map of the globe. The four drill sites are between 30 degrees North and 30 degrees South latitude. Two are close to the equator. As Lindzen has written, the tropics are very stable; it is the temperature differences between the tropics and the poles that is important. Thus, the locations of drill sites used to make calculations of global mean temperatures are questionable.

Further, the map shows the Caribbean Seaway open and no significant distance between North America, Greenland, and Eurasia, all indicating that the ocean circulations were vastly different. Further, although the map shows a small Drake Passage between South America and Antarctica, other research (marine magnetic anomalies) shows the passage did not open until 29 million years ago and the deep Antarctic Circumpolar Current was not established until 24 million years ago. There may have been temporary openings and closings.

Also, early in the period, the Trans-Saharan Seaway covered what is now desert connecting the Mediterranean Sea to the South Atlantic Ocean.

More telling, is that the map shows that India is an island continent roughly at the equator, far separated from Eurasia, about 30 degrees North. Obviously, the Himalayas had not formed. Other research indicates the collision creating the Himalayas may have begun from 35 million to 50 million years ago. The formation of the immense 2,900 km (1800 mile) mountain range must have changed atmospheric circulations.

Further, the reference to the base map is a website which states:

“ODSN is the Ocean Drilling Stratigraphic Network. It was planned as an initiative of GEOMAR, Research Center for Marine Geosciences / Kiel and the Geological Institute of the University Bremen, intended to enhance availability and usage of data related to the Deep Sea Drilling Project (DSDP) and the Ocean Drilling Program (ODP) in 1996....”

The last update was May 29, 2011. The last update to the GEOMAR web site is Aug 5, 2014.

It is strange that the two formerly distinguished journals would publish this research as significant and new. To give a biological perspective to the time period these studies claim to bridge, 50 million years ago the ancestor of blue whales, and all whales, walked the land on all fours, the Whale of Pakistan, *Pakicetus*. See links under Defending the Orthodoxy and <https://pubs.usgs.gov/gip/dynamic/himalaya.html>, <https://www.odsnet.de/>, <http://digitallibrary.amnh.org/handle/2246/6950>, <https://www.odsnet.de/odsnet/index.html>, <https://www.nhm.ac.uk/discover/when-whales-walked-on-four-legs.html>

Legal Smears? The State of Delaware has filed litigation against oil companies for not revealing the effects of dangerous global warming, that is not occurring. The litigation repeats charges against Willie Soon, a distinguished astrophysicist and a director of SEPP. As with previous claims against Soon, the litigation gives no evidence, just accusations. Apparently, many members

of the legal community, including some state attorneys general do not understand what constitutes evidence. See links under Litigation Issues.

Wildfires: In tracking fires in the Pacific Northwest, meteorologist Cliff Mass expressed concern that the grassland fires found largely east of the Cascade Mountains might jump to the dry timber west of the Cascades or the timberlands may be accidentally ignited by humans. As he stated:

“The bottom line of all this is that there is the potential for large fires in western Oregon or Washington, particularly south of Olympia. The fuels are dry, the relative humidity will be low, and the easterly winds strong, if not extreme. All it will take is a careless ignition.... which we must do everything to avoid.”

It is important to note that the weather events associated with these fires are not common but are part of nature. Further, the conditions have been intensified by government policies stopping people from clearing the fuel near their homes and the desire of many humans to live in or near the trees. See links under Seeking a Common Ground and Changing Weather.

Number of the Week: 10% As a study in the journal “Fire” states:

“...This study illustrates how the wildland-urban interface (WUI), which accounts for only a small portion of U.S. land area (10%), acts as a major source of fires, almost exclusively human-started.”

See link under Seeking a Common Ground

NEWS YOU CAN USE:

Censorship

Ran out of arguments? Extinction Rebellion ban newspapers instead

By Jo Nova, Her Blog, Sep 7, 2020

<http://joannenova.com.au/2020/09/ran-out-of-arguments-extinction-rebellion-ban-newspapers-instead/>

Challenging the Orthodoxy -- NIPCC

Climate Change Reconsidered II: Physical Science

Idso, Carter, and Singer, Lead Authors/Editors, Nongovernmental International Panel on Climate Change (NIPCC), 2013

<https://www.heartland.org/media-library/pdfs/CCR-II/CCR-II-Full.pdf>

Summary: <https://www.heartland.org/template-assets/documents/CCR/CCR-II/Summary-for-Policymakers.pdf>

Climate Change Reconsidered II: Biological Impacts

Idso, Idso, Carter, and Singer, Lead Authors/Editors, Nongovernmental International Panel on Climate Change (NIPCC), 2014

<http://climatechangereconsidered.org/climate-change-reconsidered-ii-biological-impacts/>

Summary: <https://www.heartland.org/media-library/pdfs/CCR-IIb/Summary-for-Policymakers.pdf>

Climate Change Reconsidered II: Fossil Fuels

By Multiple Authors, Bezdek, Idso, Legates, and Singer eds., Nongovernmental International Panel on Climate Change, April 2019

<http://store.heartland.org/shop/ccr-ii-fossil-fuels/>

Download with no charge:

<http://climatechangereconsidered.org/wp-content/uploads/2019/01/Climate-Change-Reconsidered-II-Fossil-Fuels-FULL-Volume-with-covers.pdf>

Why Scientists Disagree About Global Warming

The NIPCC Report on the Scientific Consensus

By Craig D. Idso, Robert M. Carter, and S. Fred Singer, Nongovernmental International Panel on Climate Change (NIPCC), Nov 23, 2015

<http://climatechangereconsidered.org/>

Download with no charge:

<https://www.heartland.org/policy-documents/why-scientists-disagree-about-global-warming>

Nature, Not Human Activity, Rules the Climate

S. Fred Singer, Editor, NIPCC, 2008

http://www.sepp.org/publications/nipcc_final.pdf

Global Sea-Level Rise: An Evaluation of the Data

By Craig D. Idso, David Legates, and S. Fred Singer, Heartland Policy Brief, May 20, 2019

<https://www.heartland.org/template-assets/documents/publications/SeaLevelRiseCCRIL.pdf>

Challenging the Orthodoxy

Methane and Climate

By W. A. van Wijngaarden and W. Happer, CO2 Coalition, April 2020

https://co2coalition.org/wp-content/uploads/2019/11/MethaneClimate_WijnGaardenHapper-1.pdf

An oversimplified picture of the climate behavior based on a single process can lead to distorted conclusions

By Richard S. Lindzen, The European Physical Journal Plus, June 3, 2020

<https://link.springer.com/article/10.1140/epjp/s13360-020-00471-z>

Pervasive Warming Bias in CMIP6 Tropospheric Layers

By Ross McKittrick and John Christy, Earth and Space Science, July 15, 2020

<https://agupubs.onlinelibrary.wiley.com/doi/10.1029/2020EA001281>

Austrian Analyst: Things With Greenhouse Effect (GHE) Aren't Adding Up...”Something Totally Wrong”

By Erich Schaffer, No Tricks Zone, Sep 11, 2020

<https://notrickszone.com/2020/09/11/austrian-analyst-things-with-greenhouse-effect-ghe-arent-adding-up-something-totally-wrong/>

Defending the Orthodoxy

Earth barreling toward 'Hothouse' state not seen in 50 million years, epic new climate record shows

Record goes back to the dinosaur extinction.

By Brandon Specktor, Live Science, Sep 10, 2020 [H/t Bernie Kepshire]

[https://www.livescience.com/oldest-climate-record-ever-cenozoic-](https://www.livescience.com/oldest-climate-record-ever-cenozoic-era.html#:~:text=Learn%20more-)

[era.html#:~:text=Learn%20more-](https://www.livescience.com/oldest-climate-record-ever-cenozoic-era.html#:~:text=Learn%20more-)

[.Earth%20barreling%20toward%20'Hothouse'%20state%20not%20seen%20in%2050%20million,](https://www.livescience.com/oldest-climate-record-ever-cenozoic-era.html#:~:text=Learn%20more-)

[epic%20new%20climate%20record%20shows&text=When%20each%20foram%20inevitably%20died,alive%20in%20their%20fossilized%20shells](https://www.sciencemag.org/content/369/6509/1383)

Link to paper: An astronomically dated record of Earth's climate and its predictability over the last 66 million years

By Thomas Westerhold, et al, AAAS Science, Sep 11, 2020

<https://science.sciencemag.org/content/369/6509/1383>

Study analyzes the impact of carbon dioxide on Earth's climate 30 million years ago

News Release by University of Southampton, Sep 8, 2020 [H/t Bernie Kepshire]

<https://phys.org/news/2020-09-impact-carbon-dioxide-earth-climate.html>

Link to paper: Proxy evidence for state-dependence of climate sensitivity in the Eocene greenhouse

By E. Anagnostou et al. Nature Communications, Sep 7, 2020

<https://www.nature.com/articles/s41467-020-17887-x>

Protecting half of the planet is the best way to fight climate change and biodiversity loss – we've mapped the key places to do it

By Greg Asner, Director, Center for Global Discovery and Conservation Science and Professor, Arizona State University, The Conversation, Sep 8, 2020 [H/t WUWT]

<https://theconversation.com/protecting-half-of-the-planet-is-the-best-way-to-fight-climate-change-and-biodiversity-loss-weve-mapped-the-key-places-to-do-it-144908>

“The Global Deal for Nature provided a framework for the milestones, targets and policies across terrestrial, freshwater and marine realms required to conserve the vast majority of life on Earth.”

Climate Change And The Circular Economy

By Frank Van Gansbeke Forbes, Sep 3, 2020

<https://www.forbes.com/sites/frankvangansbeke/2020/09/03/climate-change-and-the-circular-economy/#7f727c54422f>

[SEPP Comment: The Professor of the Practice at Middlebury College in Vermont rehashes the “Limits of Growth” fable.]

In defense of California

Yes, the state faces serious and growing climate change-fueled challenges. But it's also better equipped than many regions to deal with them.

By James Temple, MIT Technology Review, Sep 4, 2020

<https://www.technologyreview.com/2020/09/04/1008113/in-defense-of-california-wildfires-climate->

[change/?utm_medium=tr_social&utm_campaign=site_visitor.unpaid.engagement&utm_source=Twitter#Echobox=1599584145](https://www.technologyreview.com/2020/09/04/1008113/in-defense-of-california-wildfires-climate-change/?utm_medium=tr_social&utm_campaign=site_visitor.unpaid.engagement&utm_source=Twitter#Echobox=1599584145)

Questioning the Orthodoxy

Climate Justice? Yes, That Would Be Nice

By Michael Kile, Quadrant, Sep 9, 2020

<https://quadrant.org.au/opinion/doomed-planet/2020/09/climate-trials/>

Civic authority now cowers in the face of the snowflake lynch-mobs, says ANN

WIDDECOMBE

THE ONLY difference between the modern day cancel culture and the Spanish Inquisition is the absence of physical torture.

By Ann Widdecombe, Express, Sep 9, 2020 [H/t GWPF]
<https://www.express.co.uk/comment/columnists/ann-widdecombe/1333159/British-empire-row-fossil-fuels>

Change in US Administrations

Trump expands ban on new offshore drilling sites in Atlantic

By Zeke Miller and Darlene Superville, AP, Sep 9, 2020

https://www.richmondregister.com/news/trump-expands-ban-on-new-offshore-drilling-sites-in-atlantic/article_f9882a4a-f239-11ea-9a91-1b7d8646824b.html

Social Benefits of Carbon Dioxide

Scientists Just Discovered Their Past Carbon Budget Guesses Have All Along Been Twice As Wrong As They Thought

By Kenneth Richard, No Tricks Zone, Sep 7, 2020

<https://notrickszone.com/2020/09/07/scientists-just-discovered-our-past-carbon-budget-guesses-have-all-along-been-twice-as-wrong-as-we-thought/>

Link to press release: Study suggests the ocean is soaking up twice as much CO₂ as we thought

By Nick Lavars, New Atlas, Apr 7 2020

<https://newatlas.com/environment/study-ocean-absorbs-double-co2/>

Link to paper: Metrics that matter for assessing the ocean biological carbon pump

By Ken O. Buesseler, et al, PNAS, May 5, 2020

<https://www.pnas.org/content/117/18/9679>

[SEPP Comment: Save the “Rain of Death” keep the marine snow falling!]

Problems in the Orthodoxy

António Guterres’s Anti-Coal Push For India: Unrealistic and Unwelcome

By Vijay Raj Jayaraj, India, Via GWPF, Sep 10, 2020

<https://www.thegwpf.com/antonio-guterres-anti-coal-push-for-india-unrealistic-and-unwelcome%e2%80%a8/>

“Even in the distant future (2050), India’s reliance on fossil fuels will continue and is expected to contribute around 65% of its energy needs.”

Report claims EU states will miss Paris target

NECPs show 11 out of 18 nations are not planning to phase out coal by 2030

By Staff, RENews, Sep 9, 2020 [H/t GWPF]

<https://renews.biz/63008/report-claims-eu-states-will-miss-paris-target/>

“Final National Energy and Climate Plans (NECPs) show that 11 out of 18 EU coal-countries do not have a Paris-compatible plan to phase-out the fossil fuel by 2030.”

Seeking a Common Ground

Part of the heat is coming from beneath our feet.

By Judith Curry, Climate Etc. Sep 8, 2020

<https://judithcurry.com/2020/09/08/part-of-the-heat-is-coming-from-beneath-our-feet/>

Study finds humans are behind costly, increasing risk of wildfire to millions of homes

News Release by University of Colorado at Boulder Sep 10, 2020 [H/t Bernie Kepshire]

<https://phys.org/news/2020-09-humans-costly-wildfire-millions-homes.html>

Link to paper: In the Line of Fire: Consequences of Human-Ignited Wildfires to Homes in the U.S. (1992–2015)

By Nathan Mietkiewicz et al. Fire, Sep 7, 2020
<https://www.mdpi.com/2571-6255/3/3/50>

Sceptical covid-19 research and sceptical polar bear science: is there a difference?

By Susan Crockford, Polar Bear Science, Sep 6, 2020
<https://polarbearscience.com/2020/09/06/sceptical-covid-19-research-and-sceptical-polar-bear-science-is-there-a-difference/>

Science, Policy, and Evidence

Wildfire Statistics

By Staff, Congressional Research Service, Sep 1, 2020 [H/t Wally Manheimer]
<https://fas.org/sgp/crs/misc/IF10244.pdf>

Covid-19 CFR and IFR Confused

Twitter thread by Steve McIntyre, Via WUWT, Sep 8, 2020
<https://wattsupwiththat.com/2020/09/08/covid-19-cfr-and-ifr-confused/>

The Sturgis Effect

By Chuck Dinerstein, ACSH, Sep 10, 2020
<https://www.acsh.org/news/2020/09/10/sturgis-effect-15018>

Bushfires: Ashes to Ashes All Over Again

By Vic Jurskis, Quadrant, Sep 10, 2020
<https://quadrant.org.au/opinion/doomed-planet/2020/09/bushfires-ashes-to-ashes-all-over-again/>

Review of Recent Scientific Articles by CO2 Science

Ocean Acidification Improves the Nutritive and Medicinal Value of a Brown Seaweed

Kumar, A., Buia, M.C., Palumbo, A., Mohany, M., Wadaan, M.A.M., Hozzein, W.N., Beemster, G.T.S. and Abdelgawad, H. 2020. Ocean acidification affects biological activities of seaweeds: A case study of *Sargassum vulgare* from Ischia volcanic CO₂ vents. *Environmental Pollution* 259: 113765. Sep 11, 2020

<http://www.co2science.org/articles/V23/sep/a5.php>

“One of the sites surrounds underwater CO₂ vents that naturally elevate/reduce the pCO₂/pH of the nearby seawater to a pH value of 6.7. The second site, approximately 6 km away, is nearly identical with the exception that there are no nearby CO₂ vents, resulting in a surrounding seawater pH of 8.1.”

[SEPP Comment: Even with a pH below 7, plants are healthier with more carbon dioxide to consume for photosynthesis.]

A CO₂-induced Reduction in Pathogen Damage to Rice

Dorneles, K.R., Refatti, J.P., Pazdiora, P.C., de Avila, L.A., Deuner, S. and Dallagnol, L.J. 2020. Biochemical defenses of rice against *Bipolaris oryzae* increase with high atmospheric concentration of CO₂. *Physiological and Molecular Plant Pathology* 110: 101484. Sep 9, 2020
<http://www.co2science.org/articles/V23/sep/a4.php>

Seventeen Decades of Hurricanes Data in the USA

Loehle, C. and Staehling, E. 2020. Hurricane trend detection. *Natural Hazards*
<https://doi.org/10.1007/s11069-020-04219-x>. Sep 8, 2020
<http://www.co2science.org/articles/V23/sep/a3.php>

Models v. Observations

Reliability of El Niño simulation matters for predicting future climate

El Niño and La Niña are symmetric in most models, but asymmetric in nature

By Staff, NSF, Sep 10, 2020

https://www.nsf.gov/discoveries/disc_summ.jsp?cntn_id=301205&WT.mc_id=USNSF_1

Link to paper: Dynamics for El Niño-La Niña asymmetry constrain equatorial-Pacific warming pattern

By Michiya Hayashi, Fei-Fei Jin & Malte F. Stuecker, Nature Communications, Sep 11, 2020

<https://www.nature.com/articles/s41467-020-17983-y>

Measurement Issues -- Surface

Historical climate fluctuations in Central Europe overestimated due to tree ring analysis

Present warming is extraordinary

News Release, Potsdam Institute for Climate Impact Research (PIK), Sep 10, 2020[H/t WUWT]

https://www.eurekalert.org/pub_releases/2020-09/pifc-hcf091020.php

Link to paper: Setting the tree-ring record straight

By Josef Ludescher, et al, Climate Dynamics, Sep 4, 2020

<https://link.springer.com/article/10.1007/s00382-020-05433-w>

September 10, 1931

By Tony Heller, His Blog, Sep 10, 2020

<https://realclimatescience.com/2020/09/september-10-1931/>

Hottest August Claims In California Don't Stack Up

By Paul Homewood, Not a Lot of People Know That, Sep 12, 2020

<https://notalotofpeopleknowthat.wordpress.com/2020/09/12/hottest-august-claims-in-california-dont-stack-up/#more-46489>

“There has been concern for a long time about how NOAA adjust temperature data. It is now clear from the actual data that NOAA’s US temperature record is little more than a fabrication.”

Smoke Has Caused Temperature Forecasts to Go Crazy Plus An Update

By Cliff Mass, Weather Blog, Sep 12, 2020

<https://cliffmass.blogspot.com/2020/09/smoke-has-caused-temperature-forecasts.html>

“The automated services are all too cold because the modeling systems on which they are based do not include smoke. That is also true of many of the National Weather Service models. The NOAA/NWS HRRR smoke modeling system is still experimental and will go operational this year. And I expect all modeling systems will include smoke within the next few years.

“his situation shows why it is good we have skillful human forecasters minding the shop at the National Weather Service: they are manually correcting the model predictions so that accurate forecasts are still available.”

Changing Weather

California's Creek Fire Creates Its Own Pyrocumulonimbus Cloud

By Staff, NASA, Sep 9, 2020 [H/t WUWT]

<https://www.nasa.gov/feature/goddard/2020/californias-creek-fire-creates-its-own-pyrocumulonimbus-cloud>

Derecho Iowa Corn Damage Imaged By Satellite

By Roy Spencer, His Blog, Sep 5, 2020

<http://www.drroyspencer.com/2020/09/derecho-iowa-corn-damage-imaged-by-satellite/>

Denver's Not So Unusual Weather!

By Paul Homewood, Not a Lot of People Know That, Sep 9, 2020

<https://notalotofpeopleknowthat.wordpress.com/2020/09/09/denvers-not-so-unusual-weather/>

Extreme Wildfire Potential for Western Oregon and Washington

By Cliff Mass, Weather Blog, Sep 6, 2020

<https://cliffmass.blogspot.com/2020/09/extreme-wildfire-potential-for-western.html>

Multiple Fires Ignited, Major Dust Storm Develops, Tens of Thousands Out of Power, and I-90/US 2 Closed By Winds in Eastern Washington

By Cliff Mass, Weather Blog, Sep 7, 2020

<https://cliffmass.blogspot.com/2020/09/multiple-fires-ignited-major-dust-storm.html>

The Feared Outcome Occurs: Major Wildfire on the Western Side of the Cascades

By Cliff Mass, Weather Blog, Sep 8, 2020

<https://cliffmass.blogspot.com/2020/09/the-feared-outcome-occurs-major.html>

Changing Seas

Sentinel-6 and Sea Level Rise

By Rud Istvan, WUWT, Sep 7, 2020

<https://wattsupwiththat.com/2020/09/07/sentinel-6-and-sea-level-rise/>

“First, the best long record calibrated (to vertical land motion) tide gauge estimates of SLR are about 2.2mm/year, with NO acceleration, AND closure. So, even if the new Sentinel-6 1cm claims are true, they are still not fit for purpose by a factor of about 4x SLR mm/year. And this satellite only lasts ~5 years.

“Second, if Sentinel-6 really is this good, then it should (inaccurately) find about 2.2mm of SLR per year, proving Jason-3 was a goof as its published tech spec showed. Personally, I think the chances of that data driven scientific outcome is near zero, because the Jason-3/Sentinel-6 calibration overlap period enables any necessary Sentinel-6 data processing algorithm ‘adjustments’. We already have such ‘adjustments’ shown many different ways for NOAA/NASA surface temperature UHI homogenization. (See essay ‘When Data Isn’t’ in ebook Blowing Smoke for multiple compelling examples.)”

Sea Level Fall, Accurately Reported in Local Noosa News

By Jennifer Marohasy, Her Blog, Sep 7, 2020

<https://jennifermarohasy.com/2020/09/sea-level-fall-accurately-reported-in-local-noosa-news/>

Changing Cryosphere – Land / Sea Ice

No longer the canary in the coal mine

By Paul Robson, Climate Discussion Nexus, Sep 9, 2020

<https://climatediscussionnexus.com/2020/09/09/no-longer-the-canary-in-the-coal-mine/>

Lowering Standards

Oregon Faces "Greatest Loss Of Life In State History" From Wildfires As La Nina "Threatens Bigger Blazes, Storms"

By Tyler Durden, Zero Hedge, Sep 10, 2020 [H/t Bernie Kepshire]

<https://www.zerohedge.com/commodities/oregon-faces-greatest-loss-life-state-history-wildfires-la-nina-threatens-bigger-blazes>

[SEPP Comment: Durden cites more NOAA nonsense with glorifying adjectives such as The National Weather Service, “Climate Prediction Center.” The weather forecasts are 6 to 10 Day, 8 to 14 Day, 30-day and 90-day. “Vision - An informed society preparing for and responding to climate variations and their impacts. Mission - CPC delivers real-time products and information that predict and describe climate variations on timescales from weeks to years thereby promoting effective management of climate risk and a climate-resilient society.”

https://www.cpc.ncep.noaa.gov/information/who_we_are/mission/

AEP Solves The Climate Emergency!

By Paul Homewood, Not a Lot of People Know That, Sep 10, 2020

<https://notalotofpeopleknowthat.wordpress.com/2020/09/10/aep-solves-the-climate-emergency/>

“Of course, if AEP is really right, we can immediately do away with any further CfD auctions, as energy businesses will be queuing up to build wind farms, without the need for subsidies.”

Communicating Better to the Public – Use Yellow (Green) Journalism?

Stop changing your story

By Paul Robson, Climate Discussion Nexus, Sep 9, 2020

<https://climatediscussionnexus.com/2020/09/09/stop-changing-your-story/>

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

CO2 makes trees live fast and die young: study

By Staff Writers, London (AFP), Sept 8, 2020

https://www.terraviva.com/reports/CO2_makes_trees_live_fast_and_die_young_study_999.html

[SEPP Comment: Unable to link to paper.]

Communicating Better to the Public – Make things up.

Record Heat Claims In California Last Month Are Fake

By Paul Homewood, Not a Lot of People Know That, Sep 9, 2020

<https://notalotofpeopleknowthat.wordpress.com/2020/09/09/record-heat-claims-in-california-last-month-are-fake/>

“I published some graphs showing the claims were nonsense, but promised to update them when all the data was in:”

Are UK Heatwaves Getting Worse?

Press Release by Staff, GWPF, Sep 11, 2020

<https://www.thegwpf.com/inconsistent-trends-in-uk-heatwaves/>

Link to factsheet: UK Heatwaves

By Harry Wilkinson, GWPF, Sep 11, 2020

<https://www.thegwpf.com/uk-heatwaves/>

Core blimey

By Paul Robson, Climate Discussion Nexus, Sep 9, 2020

<https://climatediscussionnexus.com/2020/09/09/core-blimey/>

Communicating Better to the Public – Do a Poll?

97% nonsense redux

By Paul Robson, Climate Discussion Nexus, Sep 9, 2020

<https://climatediscussionnexus.com/2020/09/09/97-nonsense-redux/>

Extinction Rebellion Isn't Working This Time

By Gaia Fawkes, His Blog, Sep 8, 2020 [H/t GWPF]

<https://order-order.com/2020/09/08/polling-reveals-environmental-concerns-massively-down-despiteextinctionrebellion/>

Communicating Better to the Public – Go Personal.

Nobel prize-winning economics of climate change is misleading and dangerous—here's why

By Steve Keen, The Conversation, Via Phys.org, Sep 9, 2020 [H/t Bernie Kepshire]

<https://phys.org/news/2020-09-nobel-prize-winning-economics-climate-dangeroushere.html>

Link to paper: The appallingly bad neoclassical economics of climate change

By Steve Keen, Globalizations, under Economics and Climate Emergency, Sep 1, 2020

<https://www.tandfonline.com/doi/full/10.1080/14747731.2020.1807856>

Opening sentence of the abstract: “Forecasts by economists of the economic damage from climate change have been notably sanguine, compared to warnings by scientists about damage to the biosphere.”

[SEPP Comment: Before criticizing the data use by Nordhaus, the critic should carefully check the physical evidence used to justify his claims of global warming.]

Communicating Better to the Public – Use Propaganda

Bad grief

By Paul Robson, Climate Discussion Nexus, Sep 9, 2020

<https://climatediscussionnexus.com/2020/09/09/bad-grief/>

Communicating Better to the Public – Use Propaganda on Children

If they won't listen, yell

By Paul Robson, Climate Discussion Nexus, Sep 9, 2020

<https://climatediscussionnexus.com/2020/09/09/if-they-wont-listen-yell/>

Communicating Better to the Public – Protest

UK Government Condemns Extinction Rebellion For ‘Attack On Democracy’

By Staff, Daily Telegraph, Via GWPF, Sep 5, 2020

<https://www.thegwpf.com/uk-government-condemns-extinction-rebellion-for-attack-on-democracy/>

DOMINIC LAWSON: Free speech, fake science - and why we must take the fight to the climate zealots

By Dominic Lawson, The Daily Mail, Sep 8, 2020 [H/t GWPF]

<https://www.dailymail.co.uk/debate/article-8704503/DOMINIC-LAWSON-Free-speech-fake-science-fight-climate-zealots.html>

Priti Patel brands Extinction Rebellion protesters 'eco-crusaders turned criminals' as she vows crackdown on 'guerrilla tactics'

Home Secretary Priti Patel took aim at XR protester in speech to police body

By James Tapsfield, Daily Mail, Sep 8, 2020 [H/t GWPF]

<https://www.dailymail.co.uk/news/article-8710589/Priti-Patel-lashes-Extinction-Rebellion-protesters.html>

Expanding the Orthodoxy

UN Report Pushes Green Climate Friendly Covid Recovery

By Eric Worrall, WUWT, Sep 9, 2020

<https://wattsupwiththat.com/2020/09/09/un-report-pushes-green-climate-friendly-covid-recovery/>

Questioning European Green

Green Dream Arrives In Germany! But Repowering Obstacles Pose “Imminent Catastrophe” For Wind Power

By P Gosselin, No Tricks Zone, Sep 9, 2020

<https://notrickszone.com/2020/09/09/green-dream-arrives-in-germany-but-repowering-obstacles-pose-imminent-catastrophe-for-wind-power/>

Green Deal: Germany Industry Rejects More Stringent EU Climate Targets

By Staff, GWPF & Handelsblatt, Sep 10, 2020

<https://www.thegwpf.com/green-deal-germany-industry-rejects-more-stringent-eu-climate-targets/>

What the U.K.’s Target of Net Zero Emissions Would Really Entail

By Gautam Kalghatgi, National Review, UK, Sep 10, 2020

<https://www.nationalreview.com/2020/09/u-k-net-zero-emissions-target-costly-little-gain/>

Questioning Green Elsewhere

Biden’s “Building Back Better” Is a Fable — One That Will Ruin Any Post-Covid Recovery

By Rupert Darwall, Real Clear Energy Sep 10, 2020

https://www.realclearenergy.org/articles/2020/09/10/bidens_building_back_better_is_a_fable_on_e_that_will_ruin_any_post-covid_recovery_576736.html

Highlights Of Joe Biden’s Energy Plan

By Robert Rapier, Forbes, Sep 6, 2020

<https://www.forbes.com/sites/rrapier/2020/09/06/the-highlights-of-joe-bidens-energy-plan/#7d4df1cc3bfe>

Green Jobs

Robin Hood Energy Goes Bust

By Paul Homewood, Not a Lot of People Know That, Sep 7, 2020

<https://notalotofpeopleknowthat.wordpress.com/2020/09/07/robin-hood-energy-goes-bust/>

“A council has apologised after losing millions of pounds of public cash in the collapse of an energy company it started.

“Robin Hood Energy (RHE) is shutting with the loss of 230 jobs despite millions poured into it by Nottingham City Council.”

Litigation Issues

Delaware sues major oil companies over climate change

By Rachel Frazin, The Hill, Sep 10, 2020

<https://thehill.com/policy/energy-environment/515892-delaware-sues-major-oil-companies-over-climate-change>

See link immediately below.

State of Delaware Lies About Willie Soon (as a scientist)

By Charles Rotter, WUWT, Sep 12, 2020

<https://wattsupwiththat.com/2020/09/12/state-of-delaware-lies-about-willie-soon-as-a-scientist/>

4 Things to Know About Hoboken's Climate Lawsuit

By William Allison, Energy In Depth, Sep 8, 2020

<https://eidclimate.org/four-things-to-know-about-hobokens-new-climate-lawsuit/>

Mid-Atlantic states sue EPA over Chesapeake Bay pollution

By Rebecca Beitsch, The Hill, Sep 10, 2020

<https://thehill.com/policy/energy-environment/515859-mid-atlantic-states-sue-epa-over-chesapeake-bay-pollution>

Subsidies and Mandates Forever

New petrol and diesel cars could be made £1,500 more expensive to subsidise electric vehicles

By Paul Homewood, Not a Lot of People Know That, Sep 12, 2020

<https://notalotofpeopleknowthat.wordpress.com/2020/09/11/new-petrol-and-diesel-cars-could-be-made-1500-more-expensive-to-subsidise-electric-vehicles/>

“Of course, if we won’t do as we’re told, we will have to be punished!”

EPA and other Regulators on the March

DOE Issues Emergency Order to Alleviate California Power Crisis

By Sonal Patel, Power Mag, Sep 8, 2020

<https://www.powermag.com/doe-issues-emergency-order-to-alleviate-california-power-crisis/>
[SEPP Comment: Temporarily ignore federal air quality regulations to meet the emergency.]

Revisiting EPA’s Gold King Mine blowout – Part 2

By Duggan Flanakin, WUWT, Sep 7, 2020

<https://wattsupwiththat.com/2020/09/07/revisiting-epas-gold-king-mine-blowout-part-2/>

Thirteen Years and Counting: Idaho Case Illustrates How Regulatory Enforcement Can Go Awry

By Steven D. Anderson, Kent Lassman, CEI, Sep 8, 2020

<https://cei.org/blog/thirteen-years-and-counting-idaho-case-illustrates-how-regulatory-enforcement-can-go-awry>

Energy Issues – Non-US

Vattenfall Ready to Close Largest German Coal Plant

By Darrell Proctor, Power Mag, Sep 9, 2020

<https://www.powermag.com/vattenfall-ready-to-close-largest-german-coal-plant/>

South Korea Will Close Half Its Coal-Fired Fleet

By Darrell Proctor, Power Mag, Sep 8, 2020

<https://www.powermag.com/south-korea-will-close-half-its-coal-fired-fleet/>

Blackout warnings as row between Ofgem and National Grid escalates

Network operators are furious over the regulator’s plans to cut their earnings

By Madeleine Curr, I News, UK, Sep 7, 2020 [H/t GWPF]

<https://inews.co.uk/news/environment/blackout-warnings-ofgem-national-grid-row-restrict-returns-network-operators-635706>

Energy Issues -- US

Atlantic Magazine Deceives Americans

By Donn Dears, Power For USA, Sep 8, 2020

<https://ddears.com/2020/09/08/atlantic-magazine-deceives-americans/>

[SEPP Comment: Exposing the nonsense in magazine's description of the "Interconnections Seam Study."]

SEAMS Dreams (NOT)

By Rud Istvan, WUWT, Sep 10, 2020

<https://wattsupwiththat.com/2020/09/10/seams-dreams-not/>

California approves extending the lives of four aging gas plants

By Staff, Reuters, Sep 1, 2020

<https://www.reuters.com/article/us-usa-california-power-plants/california-approves-extending-the-lives-of-four-aging-gas-plants-idUSKBN25S4U9>

Nuclear Energy and Fears

Georgia Power: New Vogtle Unit Still Set for 2021 Startup

By Darrell Proctor, Power Mag, Sep 3, 2020

<https://www.powermag.com/georgia-power-new-vogtle-unit-still-set-for-2021-startup/>

Alternative, Green ("Clean") Solar and Wind

The Impossibility of Windmills

By Paul Homewood, Not a Lot of People Know That, Sep 8, 2020

<https://notalotofpeopleknowthat.wordpress.com/2020/09/08/the-impossibility-of-windmills/>

Video from the Netherlands

"The Dismal Economics of Offshore Wind" (onshore is bad enough)

By Robert Bradley Jr. Master Resource, Sep 10, 2020

<https://www.masterresource.org/offshore-windpower-issues/dismal-economics-offshore-wind-manhattan/>

California offshore winds show promise as power source

Research News, California Polytechnical State University, Via WUWT, Sep 9, 2020

<https://wattsupwiththat.com/2020/09/09/california-offshore-winds-show-promise-as-power-source/>

Link to paper: Spatial and temporal variation of offshore wind power and its value along the Central California Coast

By Yi-Hui Wang, et al. IPO Science, **Oct 29, 2019**

<https://iopscience.iop.org/article/10.1088/2515-7620/ab4ee1>

[SEPP Comment: No cost or reliability estimates.]

Alternative, Green ("Clean") Energy -- Other

Europe's Hydrogen Fantasy An Admission of Failure

By Donn Dears, Power For USA, Sep 11, 2020

<https://ddears.com/2020/09/11/europes-hydrogen-fantasy-an-admission-of-failure/>

Environmental Disaster: Northern Europe Deforestation Up 49% Due To Effort To Meet “CO2 Targets”!

By P Gosselin, No Tricks Zone, Sep 6, 2020

<https://notrickszone.com/2020/09/06/environmental-disaster-northern-europe-deforestation-up-49-due-to-effort-to-meet-co2-targets/>

Alternative, Green (“Clean”) Vehicles

Anti-greenhouse gas

By Paul Robson, Climate Discussion Nexus, Sep 9, 2020

<https://climatediscussionnexus.com/2020/09/09/anti-greenhouse-gas/>

Decline in vehicle use in lockdown had no impact on reducing toxic particle emissions and suggests traffic is 'not a key contributor to air pollution', says Scottish study

By Rob Hull, This is Money, UK, Sep 8, 2020 [H/t GWPF]

<https://www.thisismoney.co.uk/money/cars/article-8710499/Decline-vehicle-journeys-lockdown-did-NOT-reduce-emissions-toxic-particles.html>

“It found no significant fall in harmful toxic particulate matter - known as PM2.5”

New Electric Cars Perform Wonders In Towns, Rural Roads, But Run Out Of Puff On Highways

By Neil Winton, Forbes, Sep 6, 2020

<https://www.forbes.com/sites/neilwinton/2020/09/06/new-electric-cars-perform-wonders-in-towns-rural-roads-but-run-out-of-puff-on-highways/#6990f13d69ea>

Network Rail Blame Climate Change For Stonehaven Tragedy

By Paul Homewood, Not a Lot of People Know That, Sep 11, 2020

<https://notalotofpeopleknowthat.wordpress.com/2020/09/11/network-rail-blame-climate-change-for-stonehaven-tragedy/>

“Network Rail was formed in 2002, since when, according to their graph, earthwork failures have become progressively worse. Some unkind observers might think the two things are connected!”

Nearly half of British public say they will never buy an electric car over charging fees

By Paul Homewood, Not a Lot of People Know That, Sep 11, 2020

<https://notalotofpeopleknowthat.wordpress.com/2020/09/11/nearly-half-of-british-public-say-they-will-never-buy-an-electric-car-over-charging-fees/>

“The real issue is, of course, recharging batteries. Nearly half of car owners have no access to off street parking, so will find it difficult or impossible to charge at home.”

California Dreaming

What’s Ailing California’s Electric System?

By Cheryl LaFleur, State of the Planet, Columbia University, Sep 2, 2020

<https://blogs.ei.columbia.edu/2020/09/02/whats-ailing-californias-electric-system/>

“1. Lack of clear accountability for having the resources to keep the lights on.”

[SEPP Comment: The state constitution gives the legislature ultimate power over utilities.]

Environmental Industry

Green groups save the coal underground but destroy the forest above

By Jo Nova, Her Blog, Sep 9, 2020

<http://joannenova.com.au/2020/09/green-groups-save-the-coal-underground-but-destroy-the-forest-above/>

Other Scientific News

Svalbard male polar bear dies after sedation for research purposes

By Susan Crockford, Polar Bear Science, Sep 11, 2020

<https://polarbearsociety.com/2020/09/11/svalbard-male-polar-bear-dies-after-sedation-for-research-purposes/>

[SEPP Comment: At least he was not killed intentionally for science as the last remaining colony of northern elephant seals were killed in the 1880s. Fortunately, additional colonies were found and protected.]

Other News that May Be of Interest

California wildfires: Gender reveal party blamed for fire

By Staff, BBC, Sep 7, 2020

<https://www.bbc.com/news/world-us-canada-54053811>

Announcing the gender of an expected child.

BELOW THE BOTTOM LINE:

Pelosi on wildfires in California and West: ‘Mother Earth is angry’

"The climate crisis is real and has an impact," the San Francisco Democrat says

By Dom Caliccio, Fox News, Sep 11, 2020

<https://www.foxnews.com/politics/pelosi-on-wildfires-in-california-and-west-mother-earth-is-angry>

Jane Fonda on Climate Change: “Just get rid of us Homo sapiens ASAP and things will restore themselves.”

By Eric Worrall, WUWT, Sep 11, 2020

<https://wattsupwiththat.com/2020/09/11/jane-fonda-on-climate-change-just-get-rid-of-us-homo-sapiens-asap-and-things-will-restore-themselves/>

[SEPP Comment: Did she volunteer?]

ARTICLES

Finally, Wildfire Sanity?

When houses are burning down, electric cars and solar panels don’t seem much of an answer.

By Holman Jenkins, WSJ, Sep 11, 2020

https://www.wsj.com/articles/finally-wildfire-sanity-11599856913?mod=hp_opin_pos_3

TWTW Summary: The journalist writes about the sudden shift in opinions that climate policy is not the answer to California’s wildfires: After the opening statement he states:

“Even the do-gooder, nonprofit news group ProPublica plaintively asks in a headline, ‘They Know How to Prevent Megafires. Why Won’t Anybody Listen?’ The article goes on to assert: ‘The pattern is a form of insanity: We keep doing overzealous fire suppression across California

landscapes where the fire poses little risk to people and structures. As a result, wildland fuels keep building up.'

"I guess when thousands of people might be burned out of their homes, it concentrates the mind.

"But then why was California Gov. Gavin Newsom's most quoted response to the fires 'Never have I felt more of a sense of obligation . . . to face climate change head on'?"

"Confusion abounds. One admirable New York Times article makes clear the immediate answer does not lie in climate policy: 'Millions of Americans are moving into wildfire-prone areas outside of cities, and communities often resist restrictions on development. A century of federal policy to aggressively extinguish all wildfires rather than letting some burn at low levels, an approach now seen as misguided, has left forests with plenty of fuel for especially destructive blazes.'

"But another Times article on the same day insists that 'the mechanism driving the wildfire crisis is straightforward: Human behavior, chiefly the burning of fossil fuels like coal and oil.'

"Such sentences are a counsel purely of despair. People who take an interest in global warming can only conclude fires are unstoppable and must be endured as a result of our accumulated planet sins.

"I promise no long foray into social psychology, but take the most textbook finding of behavioral economics: 'prospect theory,' or the observed tendency of human beings irrationally to overvalue a bird in the hand vs. multiple birds in the bush.

"This discovery really tells us that people, in their mind's eye, overweight a potential loss against a potential gain because the loss might be visible to others. Human beings are intensely social creatures even in the ways they systematically misconstrue their own interests. This is also why it's such an enormous, heavy lift to get past virtue-signaling before we can speak rationally about key matters. We have to spend 20 minutes talking about climate change before we can spend one minute talking about policies that would actually affect wildfires.

"But, as I say, their houses burning down are an incentive for people to grow up.

"A bit of history: It's been nearly 32 years since climate change became a mainstream political cause—I date the beginning to then-NASA scientist James Hansen's public fight with the first Bush White House in 1989. In the decades that followed, as nature dictates, climate politics became institutionalized. Institutionalized means interest groups and business lobbies becoming self-sustaining based on the money that climate fears generate. A cynic might note that during this time the world's greenhouse emissions rose more steeply than ever. Problems that become institutionalized aren't solved. They become a multigenerational meal ticket by not being solved.

"And yet 32 years have taught us a few things. It was always implausible that the world's politicians and electorates would require their economies to forgo the advantages of fossil fuels and so it has proved. But we also have discovered a lot about the likely track of future emissions. The world seems to be adhering to RCP 4.5, the second-lowest of the CO2 scenarios sketched by scientists. And not because of penny-ante handouts to solar panels and electric cars, but because of very large social and economic megatrends: urbanization, slower population growth, a shift to

service- and digitally-based economies, advancing technology and a declining energy intensity of GDP. One example: Fracking led to a multiyear decline in U.S. greenhouse gas output. Last year, before the pandemic hit, global emissions would have been flat if not for China's.

"Though this column has frequently mentioned the virtues of a carbon tax, nothing is more important for climate change than making sure this socioeconomic progress continues.

"Progress in politics is harder to come by, but I can point to some. In the past 24 months, it likely has become impossible for government and private agencies to continue peddling dire climate forecasts, as they have in recent years, based on an unrealistic, worst-case RCP 8.5 emissions scenario.

"A surprising thing has happened: Even greens have become embarrassed at the institutionalized dishonesty of such forecasts. (I cited a significant example in a column here in January.)

"If we can start being rational about fire-suppression policy, we can start being rational about climate change too."
