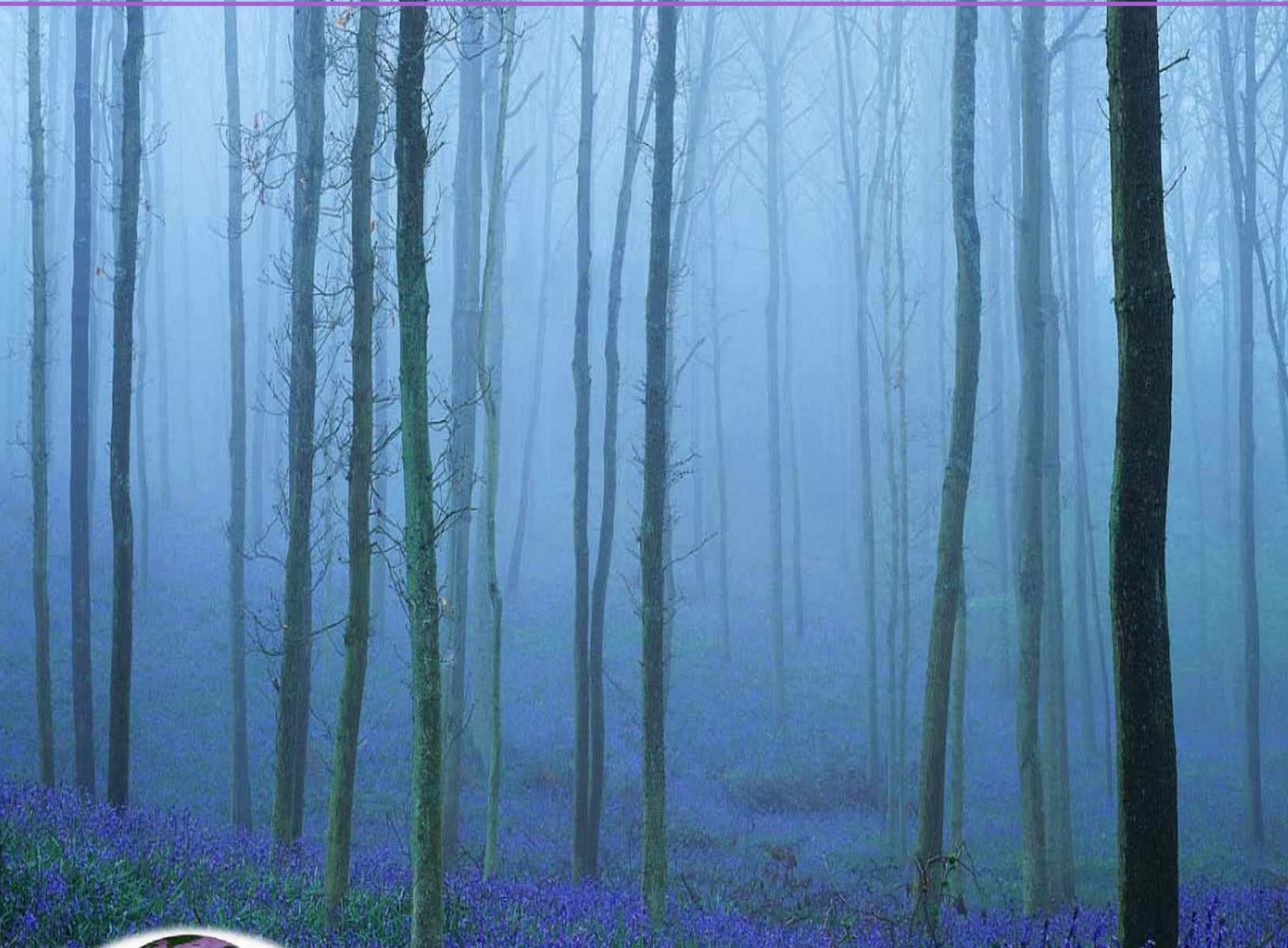


ESSENTIAL READINGS
ON
THE FUTILITY AND DANGER OF
CO₂ MITIGATION SCHEMES
Policy, Science and Politics



SPPI CO₂ MITIGATION COLLECTION ♦ May 19, 2009

TABLE OF CONTENTS

I. Policy

WHY WAXMAN/MARKEY WON'T WORK

A cost-effectiveness metric for CO₂ mitigation policies

by Christopher Monckton of Brenchley5

THREE ESSAYS ON THE WAXMAN-MARKEY CLIMATE BILL

by Chip Knappenberger

(1) Climate Impacts of Waxman-Markey
(The IPCC-based arithmetic of no gain – Part I)17

(2) Climate Impacts of Waxman-Markey
(Part II)—Global Sign-Up22

(3) “Dirty” Waxman-Markey: How Small Can Small Get?29

INDIANA SAYS “NO THANKS” TO CAP AND TRADE

No honest person thinks this will make a dent in climate change

by Mitch Daniels32

ENERGY MYTHS AND REALITIES

by Keith O. Rattie34

CARBON CREDITS: ANOTHER CORRUPT CURRENCY?

The real hockey-stick graph

by Joanne Nova46

II. Science

ON THE CENTRAL QUESTION OF CLIMATE SENSITIVITY

by Lord Monckton of Brenchley.....65

SPPI MONTHLY CO₂ REPORT – APRIL 2009

by Christopher Monckton, Editor81

GLOBAL WARMING IS *NOT* HAPPENING

by Lord Monckton of Brenchley.....108

III. Politics

CLIMATOLOGY VERSUS CLIMATISM <i>by Vinod K. Dar</i>	120
I AM AN INTELLECTUAL BLASPHEMER <i>by Alexander Cockburn</i>	124
AL GORE'S PROPAGANDA <i>by Roy W. Spencer, Ph. D.</i>	128

I. Policy

WHY WAXMAN/MARKEY WON'T WORK

A cost-effectiveness metric for CO₂ mitigation policies

by Christopher Monckton of Brenchley | May 18, 2009

A simple, robust metric to analyze the cost-effectiveness of measures to mitigate anthropogenic CO₂ emissions, expressed not – as now – in tonnes of CO₂ emission foregone but in Kelvin degrees of warming prevented, is described, evaluated, and applied to various currently-proposed mitigation policies, all of which prove disproportionately costly and ineffective. *Results:* To reduce mean global surface temperature by 1K, CO₂ emissions of **2-20 teratonnes** must be foregone. Full implementation of the Waxman-Markey Climate Bill of 2009 would reduce mean global surface temperature by **0.00025-0.0025 K/year** at a cost of **\$60-600 trillion** for each 1 K reduction in mean global surface temperature, and reducing temperature by 1 K via the Bill would take **400-4000 years**. Shutting down the entire global economy would reduce temperature by **0.0035-0.035 K/year**. Implications for global macroeconomic policy are considered.

The question, then, is how many tonnes n of CO₂ emission we must forego to prevent 1K of “global warming”. On this crucial value the cost-effectiveness of any given mitigation strategy depends.

Traditionally but misleadingly, policies to mitigate anthropogenic CO₂ emissions are presented in terms of “carbon-footprint” reduction. However, reducing CO₂ emissions is not an end in itself: its declared aim is to prevent resultant increases in global mean surface temperature. The question, then, is how many tonnes n of CO₂ emission we must forego to prevent 1K of “global warming”. On this crucial value the cost-effectiveness of any given mitigation strategy depends.

In Figure 1, annual CO₂ emissions a in millions of metric tons (Mt) (upper panel) divided by the annual change ΔC in CO₂ concentration (ppmv) (center panel) yield the volume $v = a/\Delta C$ (Mt/ppmv) of emissions required to raise CO₂ concentration by 1 ppmv (lower panel). According to Dr. Patrick Michaels, whose values for v are our starting-point, there has been no trend since 1959: v is near-constant at 15,700 Mt CO₂/ppmv including volcanic effects, or **14,150 Mt CO₂/ppmv** excluding volcanic effects. Since large eruptions are intermittent, we shall use the latter value.

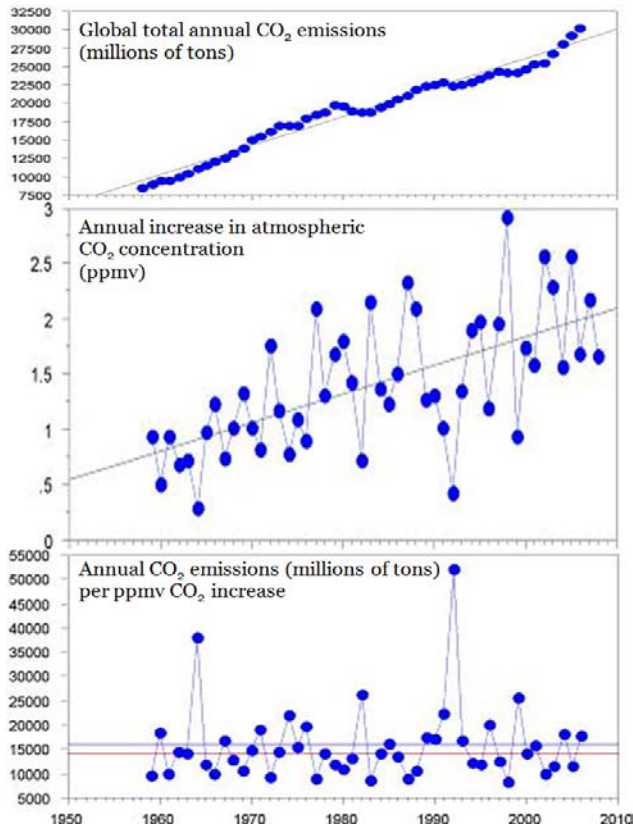


Figure 1

Annual CO2 emissions (Mt) per unit part per million atmospheric CO2 increase

Top: Annual global CO2 emissions (millions of metric tons), 1958-2006.

Center: Annual change in atmospheric CO2 concentration (ppmv), 1959-2006.

Bottom: Annual CO2 emissions (millions of metric tons) per 1 ppmv change in atmospheric CO2 concentration (top divided by center), 1959-2006. **Blue level:** 1959-2006 mean 15,700 Mt CO2/ppmv. **Red level:** 1959-2006 mean ~14,150 Mt CO2/ppmv excluding the volcano-influenced years 1964, 1982, 1992.

Data source: Carbon Dioxide Information Analysis Center.

Evaluation: Dr. Patrick Michaels.

In 2000, mean atmospheric CO₂ concentration C_0 was 368 ppmv (NOAA global index). On the A2 “business-as-usual” scenario, IPCC (2007) predicts CO₂ concentration $C = 836$ [730, 1020] ppmv by 2100. Adhering henceforth to central estimates for simplicity, the IPCC projects an increase $\Delta C_{C21} = (C - C_0) = 468$ ppmv in CO₂ concentration over the 21st century. Also on the A2 scenario, the 21st-century temperature change is given by IPCC (2007) as 3.4 K. Then our central estimate of the increase w in CO₂ concentration that would warm the world by 1 K is $w = \Delta C_{C21} / \Delta T_{C21} \approx 468 / 3.4 \approx \mathbf{140 \text{ ppmv/K}}$. We now evaluate the crucial quantity –

$$n = vw \approx 14,150 \text{ Mt CO}_2/\text{ppmv} \times 140 \text{ ppmv/K} \approx \mathbf{2,000,000 \text{ Mt CO}_2/\text{K}}$$

Therefore, to prevent a “global warming” of only 1 K we must forego the emission of approximately 2×10^{12} tonnes (2 teratonnes) CO₂ – a very large number.

It has been calculated theoretically (e.g. Lindzen, 2007; Schwartz, 2007; Monckton, 2008) and confirmed empirically by direct measurement of outgoing long-wave radiation from the Earth’s characteristic-emission level (e.g. Covey, 1995; Wielicki, Wong *et al.*, 2002 [but see Wong, Wielicki *et al.*, 2006]; Chen *et al.*, 2002; Cess & Udelhofen, 2003; Hatzidimitriou *et al.* 2004; Clement & Soden, 2005) and by direct measurement of ocean temperatures in the mixed layer (Lyman *et al.*, 2006 as amended; Gouretski & Koltermann, 2007; Willis, 2008; and Loehle, 2009 all show ocean cooling; Willis *et al.*, 2009 show no ocean warming); that the IPCC’s central estimate of climate sensitivity to atmospheric CO₂ enrichment may be exaggerated,

The threatened shutdown of five-sixths of today's US economy, which would in effect allow electricity and automobile use for just one day per week, would reduce mean global surface temperature by 1K in 400-4000 years.

perhaps by as much as an order of magnitude. If so, a corresponding increase in the value of n is mandated.

Accordingly, $n = 2\text{-}20$ teratonnes CO₂/K, where the lower value is based on the UN's central estimate of climate sensitivity to atmospheric CO₂ concentration and the higher value is based on the real possibility that the UN has exaggerated climate sensitivity tenfold.

Temperature change ΔT_{mit} resulting from any proposed mitigation strategy is $\Delta T_{\text{mit}} = \Delta C_{\text{mit}} / n$,

where ΔC_{mit} is the reduction in CO₂ emission that the strategy is expected to achieve. For instance, the Waxman/Markey Bill currently before the US Congress ambitiously (and damagingly) declares that CO₂ emissions in the US in the year 2050 will have been cut by five-sixths of the 2005 US value $a \approx 6000$ Mt. Thus, the annual temperature reduction resulting from full implementation of the Bill would be $\Delta T_{\text{mit}} = 5000 \text{ Mt} / n = 0.00025\text{-}0.0025$ K/yr.

The threatened shutdown of five-sixths of today's US economy, which would in effect allow electricity and automobile use for just one day per week, would reduce mean global surface temperature by 1K in 400-4000 years.

The cost of reducing mean global surface temperature by 1 K via the Waxman/Markey Bill would accordingly be \$60-600 trillion.

The Obama White House has estimated the cost of implementing the Waxman/Markey Bill at \$1.8 trillion over the next decade: i.e. \$180 billion/year to reduce global temperature by 0.0025-0.00025 K/year. The cost of reducing mean global surface temperature by 1 K via the Waxman/Markey Bill would accordingly be \$60-600 trillion.

The principal stated purpose of giving away free permits to emit CO₂ in an otherwise-crippling cap-and-tax regime is "to protect consumers from electricity price increases". However, if consumers are protected from higher electricity costs they will continue to consume as much electricity as before, so that during the two transitional decades the impact of the Bill on the climate will be even more negligible than when (or, rather, if) it is implemented in full.

Though it is not suggested here that the Bill will be the only such mitigation measure proposed worldwide, to facilitate comparisons the simple and robust cost-effectiveness metric that we have described is denominated as financial cost per 1 K mean global surface temperature increase prevented.

Nevertheless, it is of course possible that other legislatures might allow reason to prevail, whereupon only the United States would actually go so far as to shut down her entire economy. Shutting down five-sixths of that very large fraction of the economy that is necessarily and absolutely dependent upon the manufacture, vecture, or consumption of

fossil fuels would have knock-on effects that would fling the remainder of the economy into the Stone Age. It is the whole US economy that the Bill throws into senseless jeopardy.

In the real world, however, the effectiveness of the Waxman/Markey Bill will be very much less than its wildly ambitious target for closing down the US economy suggests. For after unanimous and understandable protests from the industries and enterprises most directly affected by the Bill's menace of total economic shutdown it has belatedly been made clear that the bulk of the damage caused by this legislative wrecking-ball is to be deferred until 20 years from now.

Scant days before the Bill was due to be marked up in the Energy and Commerce Committee of Congress, some 280 pages were suddenly added to this already long, diffuse document. Among these additional pages, which few Honorable Members will have had time to read before they begin enacting the economic and political destruction of the United States into law, there is a document under the names of the Bill's eponymous Congressional sponsors entitled *Proposed Allowance Allocation*.

The principal stated purpose of giving away free permits to emit CO₂ in an otherwise-crippling cap-and-tax regime is "to protect consumers from electricity price increases". However, if consumers are protected from higher electricity costs they will continue to consume as much electricity as before, so that during the two transitional decades the impact of the Bill on the climate will be even more negligible than when (or, rather, if) it is implemented in full.

In short, every pork-barrel or environmentalist cause that is currently in vogue is catered for, up to a total of 153.5% of the free allowances that are to be issued. The Bill not only repeals common sense: it also repeals the laws of arithmetic.

For instance, the hastily-added rider to the Bill says –

Protection from Electricity Price Increases: The electricity sector will receive 35% of the [free] allowances, representing 90% of current utility emissions. Local electric distribution companies, whose rates are regulated by the states, will receive 30% of the allowances, which they must use to protect consumers from electricity price increases. Merchant coal and long-term power purchase agreements will receive 5% of the allowances. These allowances will be distributed according to a formula recommended by the utility industry and will phase out over a five-year period from 2026 through 2030.

Of the free allowances, 9% will go to local natural-gas distribution companies, 1.5% will go to states to allow them to subsidize heating oil and propane, and 15% will be auctioned, with the proceeds distributed to low-income families to protect them from "other energy cost increases".

In addition, 15% of the free allowances will go to industries that depend most heavily on fossil fuels; 2% will go to oil refiners; up to 5% will pay for "carbon capture and sequestration"; up to 10% will go to States for energy-efficiency "investment"; up to 3%

will be spent on “investments” in electric vehicles; and 1% will go to university research into clean energy.

The wish-list continues. Up to 5% of the free allowances will “prevent tropical deforestation”; up to 8% will go to “domestic adaptation”; up to 8% to “international adaptation”; and up to 1% to “worker assistance and job training”.

In short, every pork-barrel or environmentalist cause that is currently in vogue is catered for, up to a total of 153.5% of the free allowances that are to be issued. The Bill not only repeals common sense: it also repeals the laws of arithmetic.

Rightly, the Republican Minority has written to the Bill’s sponsors asking them not to railroad this immature measure through Congress. Instead, the Minority sensibly recommend that, at the very least, Hon. Members should be given the time actually to

For at least two decades, there will be so many exemptions that the cap-and-tax regime – aside from employing an army of bureaucrats to administer it, and enriching yet another army of portly middle-men trading in a new and unstable derivatives market worryingly similar to that which recently brought down the global banking system – will cost working taxpayers a fortune while being wholly ineffective for its primary declared purpose of mitigating “global warming”.

read the confetti of belatedly-added pages before they attempt to mark up the Bill.

However, it is clear from the long list of exemptions to the cap-and-tax regime that is the cornerstone of the Bill that yet another massive and costly bureaucratic mechanism will be inflicted on the American people without the slightest scientific justification and without even the smallest discernible impact on mean global surface temperature.

For at least two decades, there will be so many exemptions that the cap-and-tax regime – aside from employing an army of bureaucrats to administer it, and enriching yet another army of portly middle-men trading in a new and unstable derivatives market worryingly similar to that which recently brought down the global banking system – will cost working taxpayers a fortune while being wholly ineffective for its primary declared purpose of mitigating “global warming”.

Let us assume *ad argumentum*, and contrary to science, that The Planet needs Saving. It is clear that taxation of the harmless trace gas that we exhale every time we breathe out must fail, because in the end the people will not accept Stone-Age conditions without better evidence that “global warming” – if and when it resumes after almost 15 years’ absence – may yet prove to be a global crisis. Since big government cannot Save the Planet, can individual citizens, on the Scottish principle that “mony a mickle makes a muckle”, Save The Planet instead? No. The mean annual emissions of an average US household are $a \approx 24$ t CO₂/year. Closing down the household altogether, and dividing the emission saving by 2-20 teratonnes, would prevent warming of **0.0000000000012-0.000000000012 K/year.**

To take another “mony-a-mickle” example, the European Union has estimated that each of the following self-denying ordinances would earn an indulgence of one-third of a tonne of CO₂:

- missing a short-haul flight;
- using a bicycle rather than a car for a year’s short journeys;
- turning down the central-heating thermostat by 1 K for a year;
- adding more insulation to the average house;
- buying a car with greater fuel economy and using it for a year;
- turning off seven 60-watt lights for a year;
- turning off the air-conditioning for four hours daily throughout the summer;
- not using a tumble-dryer for a year;
- going 2000 miles by train rather than by car;
- or replacing a power-shower with a low-power shower-head for a year.

Doing all ten penances together would earn an indulgence of 3.333 tonnes CO₂/year, preventing “global warming” of 0.0000000000000002-0.0000000000000002 K/year (i.e. 2⁻¹⁵-2⁻¹⁶ K/year). Even if the entire population of the planet were to perform the ten penances (impossible because most of the world’s population is not wealthy enough to qualify), only 0.0001-0.001 K/year of warming would be prevented – or 1 K in 1000-10000 years. Doing only one of the ten penances would reduce the indulgence (and the effect on temperature) tenfold. Potentially, therefore, the universal performance of one of the Ten Pious Pences of Brussels might take 10,000-100,000 years to prevent just 1 K of “global warming”.

In the European Union, a cap-and-tax regime functionally identical to that which the Waxman/Markey Bill proposes has already failed not once but twice. The first time, member-states granted themselves free permits that exceeded their total emissions and the price of a permit to emit a tonne of carbon dioxide fell to the market-clearing price: zero. The second time, the world economy collapsed, and the price of hot-air permits is again heading for the floor.

It has been well observed that the EU cap-and-tax regime was designed to fail, and – as the EU’s unelected masters proudly proclaim – it is performing as designed. The long list of free permits that the Waxman/Markey Bill proposes will similarly guarantee that the US cap-and-tax regime fails.

In the European Union, a cap-and-tax regime functionally identical to that which the Waxman/Markey Bill proposes has already failed not once but twice.

The sponsors of the Bill may imagine that it will start to become effective in Saving The Planet when most of their 153.5% free allowances are phased out in 2025-2030, long after they have themselves safely retired from the scene of the macroeconomic train-wreck that the Bill will have caused. However, by then it will have become all too painfully evident to the true believers in the New Religion that they have made the worst

The sponsors of the Bill may imagine that it will start to become effective in Saving The Planet when most of their 153.5% free allowances are phased out in 2025-2030, long after they have themselves safely retired from the scene of the macroeconomic train-wreck that the Bill will have caused. However, by then it will have become all too painfully evident to the true believers in the New Religion that they have made the worst strategic mistake that any religion can make – namely, believing in a credo that is imminently susceptible of disproof both by science and by events.

strategic mistake that any religion can make – namely, believing in a credo that is imminently susceptible of disproof both by science and by events. By 2020 at the latest, the continuing failure of global temperatures to rise as predicted will have brought the already-dying “global warming” story to an unlamented end.

Why are all of the values we have calculated for preventing future “global warming” via cuts in emissions infinitesimal? The reason is that, even on the IPCC’s probably-exaggerated value for climate sensitivity, the megatonnage n of CO₂ emissions that must be foregone to reduce global temperature even by as little as 1 K is very large.

Even if the entire planet, at the Copenhagen conference of the states parties to the UN Framework Convention on

Climate

Change, were to shut down its entire economy and revert to the Stone Age, but without even the right to light fires in its caves, even if the whole of humanity were to stop breathing and were to emit not one nanogram of CO₂ ever again, the rise in mean global surface temperature prevented by our universal self-immolation would be **0.0035-0.035 K/year**. The cost of this trivial prevention of a global temperature increase which, even if it occurred, would be largely harmless, would be nothing less than the entire annual output of the global economy.

The implications for economic policy of the substantial mismatch between the cost of mitigation and its effectiveness in preventing “global warming” are profound. In London in 2008, the House of Commons passed a “Climate Change Bill” (with only three dissenters) on the very evening when the first October snow in 74 years was falling in Parliament Square. Now there is a rapidly-expanding “Department of Energy and

The implications for economic policy of the substantial mismatch between the cost of mitigation and its effectiveness in preventing “global warming” are profound. In London in 2008, the House of Commons passed a “Climate Change Bill” (with only three dissenters) on the very evening when the first October snow in 74 years was falling in Parliament Square.

Climate Change”, electricity prices are needlessly higher, working people’s jobs are being destroyed, businesses are going bankrupt at a record rate, and City financiers are making fortunes “trading hot air” on carbon permit exchanges.

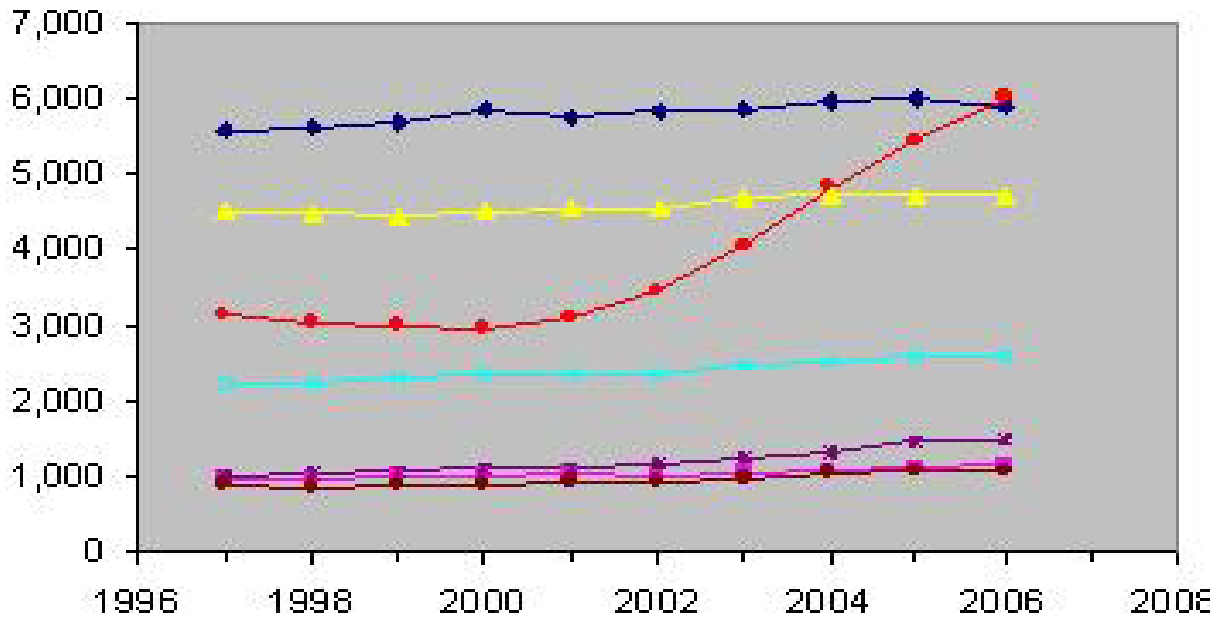
In Japan, utilities are voluntarily spending hundreds of billions of yen of their customers’ and shareholders’ money on “carbon offsets”, significantly but pointlessly increasing the price of electric power and of everything that depends upon it.

Who would be the beneficiaries, to the extent that – *per impossibile* – mitigation measures might eventually work? China, India, Russia, Indonesia, Brazil, and the other substantial, emerging, third-world economies would benefit, because if we voluntarily closed down our economies and they did not, we should merely export our jobs and our enterprises to them, paradoxically increasing the planet’s carbon footprint because their emissions per unit of production are far higher than ours. They would also benefit because we should no longer be competing with them for finite natural resources.

China and India have already made it abundantly plain that they will not, under any circumstances, make significant cuts in their already-low *per-capita* emissions. Though their emissions are low *per capita*, they are high in absolute terms because there are so many *capita*. Figure 2 shows that emissions growth everywhere in the world except China has been negligible over the past decade: but China, in her dash for the prosperity that is the necessary precondition for stabilizing her population, is understandably, and rightly, fast increasing her consumption of fossil fuels. Rightly, because without prosperity the Chinese population would continue to rise, ultimately creating a far larger carbon footprint –

Figure 2

Annual energy-related CO2 emissions



Annual energy-related emissions (Mt CO2) in **the US**, **South America**, **Europe**, **Eurasia**, **the Middle East**, **Africa**, and **China**.

And how are the Democrats proposing to deal with China's declaration that – except at the margins – she is not prepared to make cuts in *per-capita* emissions? They menacing China and India with a protectionist trade war if they do not consent to keep their people in poverty by cutting emissions that are not only harmless but among the lowest *per capita* in the world. Not only is the governing regime in Washington determined to destroy the US economy by closing down five-sixths of it from within: it is also

Not only is the governing regime in Washington determined to destroy the US economy by closing down five-sixths of it from within: it is also determined to destroy the world economy by an international policy that has never yet been known to succeed and has always caused widespread economic damage – trade protectionism.

determined to destroy the world economy by an international policy that has never yet been known to succeed and has always caused widespread economic damage – trade protectionism.

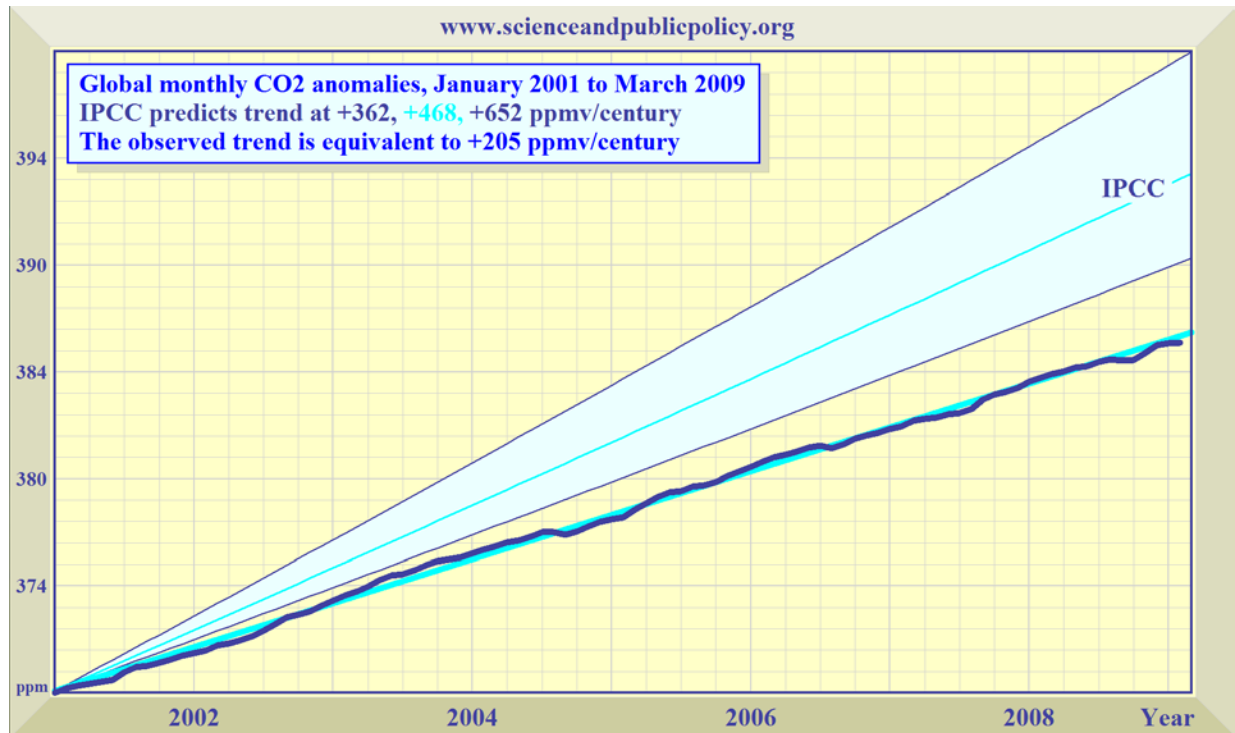
The world's economy is in enough trouble already, even without the damage caused by the Obama Administration's costly non-solutions to the non-problem of "global warming". Today, more than ever, we cannot afford to make costly and irrational macroeconomic mistakes such as those which the environmental lobbies demand that we should make in the name of saving a planet that does not need to be saved.

What, then, would be a rational, prudent, and beneficial policy?

First, we should study the carbon cycle a little more diligently. The IPCC was honest enough to admit in its 2001 assessment that it could not add up the global "carbon budget" to within a factor of two of the right answer. For some reason that the IPCC admits it cannot explain, atmospheric CO₂ concentration is rising at less than half the IPCC's central estimate, as Figure 3 shows –

Today, more than ever, we cannot afford to make costly and irrational macroeconomic mistakes such as those which the environmental lobbies demand that we should make in the name of saving a planet that does not need to be saved.

Figure 3
CO₂ concentration is rising at half the predicted rate



CO₂ is rising in a straight line, well below the IPCC's projected range (pale blue region). The deseasonalized real-world data are shown as a thick, dark-blue line overlaid on the cyan least-squares linear-regression trend. There is no sign of the exponential growth predicted by the IPCC. Data source: NOAA.

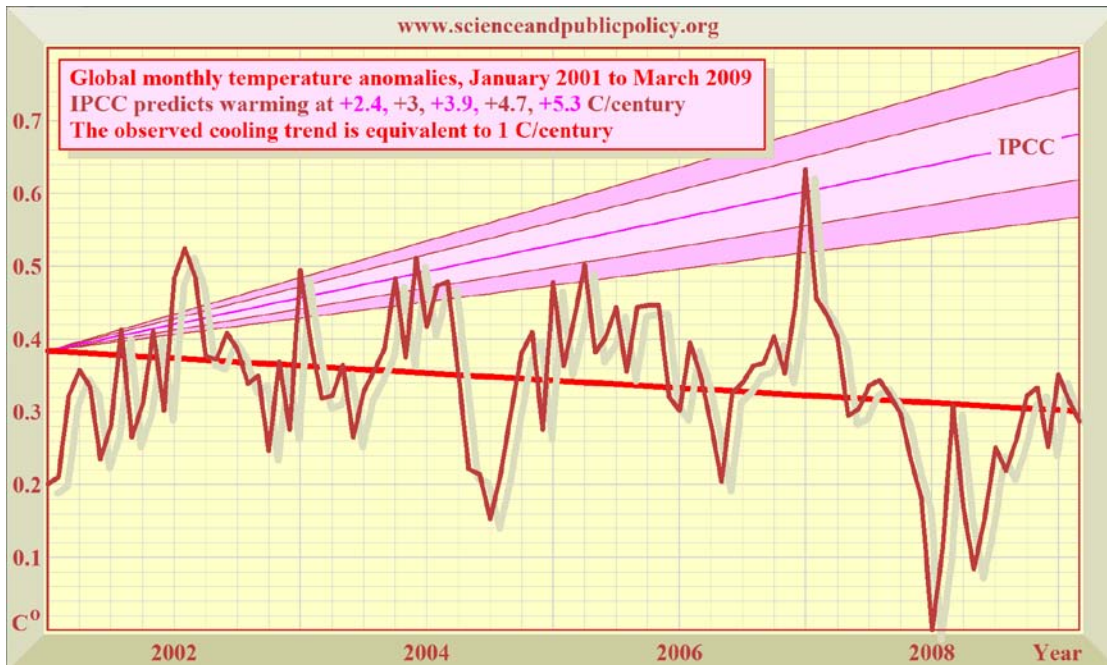
Since the turn of the millennium on 1 January 2001 there has been no statistically-significant "global warming": indeed, there has been eight and a half years' global cooling trend.

The failure of CO₂ concentration to rise even half as fast as predicted, notwithstanding global emissions that are at the higher end of the IPCC's projected range, requires, on its own, that all of the IPCC's projections for anthropogenic warming in the current century be halved, ending the "climate crisis".

Secondly, therefore, we should wait and see. Since the turn of the millennium on 1 January 2001 there has been no statistically-significant "global warming": indeed, there has been eight and a half years' global cooling trend, as Figure 4 shows –

Figure 4

Eight and a half years' global cooling at 1 K/century



For eight and a half years, global temperatures have trended downward. The IPCC's predicted equilibrium warming path (pink region) bears no relation to the global cooling that has been observed in the 21st century to date. Source: SPPI global temperature index (arithmetic mean of HadCRU, NCDC, RSS, and UAH datasets).

Therefore, there is certainly no scientific basis for the frequent statements by Vice-President Al Gore and the Prince of Wales to the effect that we only have ($\approx x \leq 10$) years to Save The Planet. Merely restoring temperatures to where they were in 2000 is likely to take the best part of a decade – if temperatures recover at all.

At Copenhagen, the states parties to the Convention would be acting reasonably if they were to agree to take no further action to mitigate imagined “global warming” if and when it resumes, and to spend no more taxpayers' money on it, unless and until mean global surface temperature had risen by at least 1 K above the observed value for the year 2000. On current trends, that will not happen for at least a century, if then. Meanwhile, real environmental problems can be addressed instead.

While the attractiveness to politicians, bureaucrats, and other rent-seekers of taxing carbon emissions as a means of raising very large government revenues is self-evident, on this analysis it is equally self-evident that the costs of such needless over-taxation substantially outweigh the benefits – if, indeed, there are any benefits at all.

While the attractiveness to politicians, bureaucrats, and other rent-seekers of taxing carbon emissions as a means of raising very large government revenues is self-evident, on this analysis it is equally self-evident that the costs of such needless over-taxation substantially outweigh the benefits – if, indeed, there are any benefits at all.

References

- CESS, R.D.**, and P.M. Udelhofen. **2003**. Climate change during 1985–1999: Cloud interactions determined from satellite measurements. *Geophysical Research Letters* **30**, 1: 1019, doi:10.1029/2002GL016128.
- CHEN, J.**, B.E. Carlson, and A.D. Del Genio. **2002**. Evidence for strengthening of the tropical general circulation in the 1990s. *Science* **295**: 838-841.
- CLEMENT, A.C.**, and B. Soden. **2005**. The sensitivity of the tropical-mean radiation budget. *J. Clim.* **18**: 3189-3203.
- COVEY, C.** **1995**. Correlation between outgoing long-wave radiation and surface temperature in the tropical Pacific: a model interpretation. Lawrence Livermore National Laboratory, Livermore, CA 94551, November. UCRL-ID-122565.
- GOURETSKI, V.**, & K.P. Koltermann. **2007**. How much is the ocean really warming? *Geophysical Research Letters* **34**: 10.1029/2006GL027834.
- HATZIDIMITRIOU, D.**, I. Vardavas, K. G. Pavlakis, N. Hatzianastassiou, C. Matsoukas, and E. Drakakis. **2004**. On the decadal increase in the tropical mean outgoing longwave radiation for the period 1984–2000. *Atmos. Chem. Phys.* **4**: 1419–1425.
- LINDZEN, R.S.** **2007**. Taking greenhouse warming seriously. *Energy & Environment* **18**: 7-8, 937-950.
- LOEHLE, C.** **2009**. Cooling of the global ocean since 2003. *Energy & Environment* **20**, 1-2: 101-104. DOI 10.1260/095830509787689141.
- LYMAN, J.M.**, J.K. Willis, and G.C. Johnson. **2006**. Recent cooling of the upper ocean. *Geophysical Research Letters* **33**: L18604, doi:10.1029/2006GL027033.
- MONCKTON OF BRENCHLEY, C.W.** **2008**. Climate sensitivity reconsidered. *Physics & Society* **37**: 3.
- SCHWARTZ, S.** **2007**. Heat capacity, time constant, and sensitivity of Earth's climate system. *J. Geophys. R.*
- SOLOMON, S.**, D. Qin, M. Manning, R.B. Alley, T. Berntsen *et al.*, in *Climate Change 2007: The Physical Science Basis. Contribution of Working Group I to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change*, S. Solomon D. Qin, M. Manning, Z. Chen, M. Marquis, *et al.*, Eds. (Cambridge Univ. Press, Cambridge, UK, and New York, USA, 2007), Technical Summary.
- WIELICKI, B.A.**, T. Wong *et al.* **2002**. Evidence for large decadal variability in the tropical mean radiative energy budget. *Science* **295**: 841–844.
- WILLIS, J. K.** **2008**. Is it me, or did the oceans cool? *U.S. CLIVAR* **6**: 2.
- WILLIS, J.K.**, J.M. Lyman, G.C. Johnson and J. Gilson. **2009**. In-situ data biases and recent ocean heat content variability. *J. Atmos. & Oceanic Technology* **26**: 846-852.
- WONG, T.**, B.A. Wielicki *et al.* **2006**. Re-examination of the observed decadal variability of the earth radiation budget using altitude-corrected ERBE/ERBS non-scanner wide-field-of-view data. *J. Clim.* **19**: 4028-4040.

Carie, Rannoch,
Scotland, PH17 2QJ:
monckton@mail.com.

THREE ESSAYS ON THE WAXMAN-MARKEY CLIMATE BILL

by Chip Knappenberger



Climate Impacts of Waxman-Markey

(The IPCC-based arithmetic of no gain – Part I)

Source: <http://masterresource.org/?p=2355>. | May 6, 2009

Editor Note: Using mainstream models and assumptions, Mr. Knappenberger finds that in the year 2050 with a 83% emissions reduction (the aspirational goal of Waxman-Markey, the beginning steps of which are under vigorous debate), the temperature reduction is nine hundredths of one degree Fahrenheit, or two years of avoided warming. A more realistic climate bill would be a fraction of this amount. The author will respond to technical questions on methodology and results and invites input on alternative scenarios and analyses.

“A full implementation and adherence to the long-run emissions restrictions provisions described by the Waxman-Markey Climate Bill would result only in setting back the projected rise in global temperatures by a few years—a scientifically meaningless prospect.” (From below.)

The economics and the regulatory burdens of climate change bills are forever being analyzed, but the bills’ primary function—mitigating future climate change—is generally ignored.

Perhaps that’s because it is simply assumed.

After all, we are barraged daily with the horrors of what the climate will become if we don’t stop emitting greenhouse gases into the atmosphere (the primary focus being on emissions from the combustion of fossil fuels). So doing something as drastic as that proposed by Waxman-Markey—a more than 80%

reduction of greenhouse gas emissions from the United States by the year 2050—must surely lessen the chances of climate catastrophe. Mustn't it?

But if that were the case, why aren't the climate impacts being touted? Why aren't Representatives Waxman and Markey waving around the projected climate success of their bill? Why aren't they saying: "Economics and regulations be damned. Look how our bill is going to save the earth from human-caused climate apocalypse"?

That reason is that it won't.

And they know it. That is why they, and everyone else who supports such measures, are mum about the outcome.

The one thing, above all others, that they don't want you to know is this: *No matter how the economic and regulatory issues shake out, the bill will have virtually no impact on the future course of the earth's climate.* And this is even in its current "pure" form, without the inevitable watering down to come.

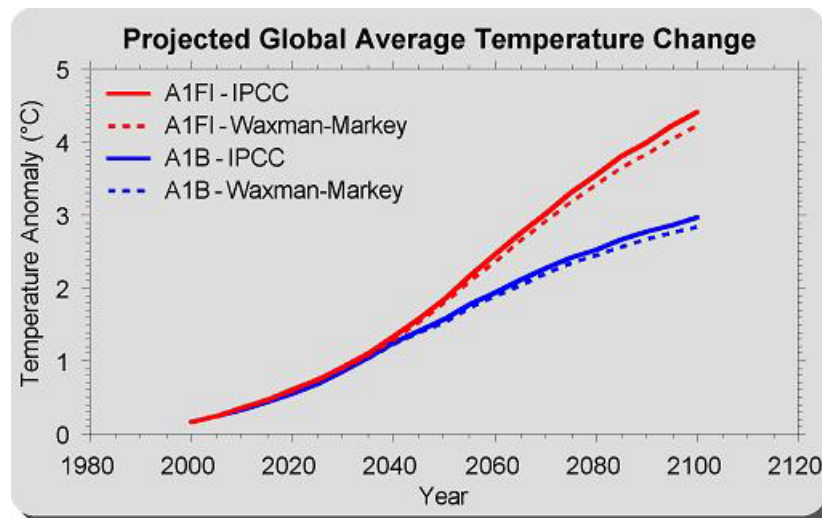
So discussion of the bill, instead of focusing on climate impacts, is shrouded in economics and climate alarm.

Getting a good handle on the future climate impact of the proposed Waxman-Markey legislation is not that difficult. In fact, there are several ways to get at it. But perhaps the most versatile is the aptly named MAGICC: Model for the Assessment of Greenhouse-gas Induced Climate Change. MAGICC is sort of a climate model simulator that you can run from your desktop (available [here](#)). It was developed by scientists at the National Center for Atmospheric Research (primarily by Dr. Tom Wigley) under funding by the U.S. Environmental Protection Agency and other organizations. MAGICC is itself a collection of simple gas-cycle, climate, and ice-melt models that is designed to produce an output that emulates the output one gets from much more complex climate models. MAGICC can produce in seconds, on your own computer, results that complex climate models take weeks to produce running on the world's fastest supercomputers. Of course, MAGICC doesn't provide the same level of detail, but it does produce projections for the things that we most often hear about and care about—for instance, the global average temperature change.

Moreover, MAGICC was developed to be used for exactly the purpose that we use it here—the purpose for which Representatives Waxman and Markey and everybody else who wants a say in this issue should be using it. That purpose is, according to MAGICC’s website, “to compare the global-mean temperature and sea level implications of two different emissions scenarios” — for example, scenarios both with and without the proposed legislative emissions reductions.

So that is what we’ll do. We’ll first use MAGICC to produce a projection of global average temperature change through the 21st century under two of the Intergovernmental Panel on Climate Change’s future emissions scenarios (which assume no explicit policy implementation). The two are: a mid-range emissions scenario (SRES A1B for those interested in the details) and a high-end emissions scenario (SRES A1FI). Then, we’ll modify these IPCC scenarios by entering in the emissions reductions that will occur if the provisions outlined in the Waxman-Markey Climate Bill are fully met (leaving aside whether or not that could be done). Basically, Waxman-Markey calls for U.S. emissions to be reduced to 20% below the 2005 emissions level by 2020, 42% below 2005 levels by 2030, and 83% below 2005 levels by 2050. We’ll assume that U.S. emissions remain constant at that reduced value for the rest of the century. We’ll then use MAGICC to produce temperature projections using these modified scenarios and compare them with the original projections.*

And here is what we get all rolled into one simple figure.



The solid lines are the projections of the change in global average temperature across the 21st century from the original IPCC A1FI (red) and A1B (blue) high

and mid-range emissions scenarios, respectively (assuming a climate sensitivity of 3°C). The dotted lines (of the same color) indicate the projected change in global average surface temperature when the emissions reductions prescribed by Waxman-Markey are factored in.

By the year 2050, the Waxman-Markey Climate Bill would result in a global temperature “savings” of about 0.05°C regardless of the IPCC scenario used—this is equivalent to about 2 years’ worth of warming. By the year 2100, the emissions pathways become clearly distinguishable, and so to do the impacts of Waxman-Markey. Assuming the IPCC mid-range scenario (A1B) Waxman-Markey would result in a projected temperature rise of 2.847°C, instead of 2.959°C rise— a mere 0.112°C temperature “savings.” Under the IPCC’s high-emissions scenario, instead of a projected rise of 4.414°C, Waxman-Markey limits the rise to 4.219°C—a “savings” of 0.195°C. In either case, this works out to about 5 years’ worth of warming. In other words, a full implementation and adherence to the emissions restrictions provisions described by the Waxman-Markey Climate Bill would result only in setting back the projected rise in global temperatures by a few years—a scientifically meaningless prospect. (Note: I present the results to three significant digits, not that they are that precise when it comes to the real world, but just so that you can tell the results apart).

Now, various aspects of the MAGICC model parameters can be tweaked, different climate models can be emulated, and different scenarios can be chosen. And different answers will be obtained. That is the whole purpose of MAGICC—to be able to examine the sensitivity of the output to these types of changes. But if you take the time to download MAGICC yourself and run your own experiments, one thing that you will soon find out is: *No matter what you try, altering only U.S. emissions will produce unsatisfying results if you seek to save the world by altering its climate.*

We have calculated only the climate impact of the United States acting alone. There is no successor treaty to the Kyoto Protocol to bind other countries to greenhouse gas emissions reductions. But, truth be told, the only countries of any real concern are China and India. The total increase in China’s emissions since the year 2000 is 50 percent greater than the total increase from rest of the world combined and is growing by leaps and bounds. And consider that India carbon dioxide emissions haven’t started to dramatically increase yet. But it is poised to do so, and an Indian official recently stated that “It is morally wrong for us to

agree to reduce [carbon dioxide emissions] when 40 percent of Indians do not have access to electricity.”

Without a large reduction in the carbon dioxide emissions from both China and India—not just a commitment but an actual reduction—there will be nothing climatologically gained from any restrictions on U.S. emissions, regardless whether they come about from the Waxman-Markey bill (or other cap-and-trade proposals), from a direct carbon tax, or through some EPA regulations.

This is something that should be common knowledge. But it is kept carefully guarded.

The bottom line is that a reduction of U.S. greenhouse gas emissions of greater than 80%, as envisioned in the Waxman-Markey climate bill will only produce a global temperature “savings” during the next 50 years of about 0.05°C. Calculating this isn’t all that difficult or costly. All it takes is a little MAGICC.

[Note: Be sure not to miss [Part II](#) of this analysis, where I take a look at what happens if the rest of the world were to play along.]

*** Assumptions Used in Running MAGICC.**

There are many parameters that can be altered when running MAGICC, including the climate sensitivity (how much warming the model produces from a doubling of CO₂ concentration) and the size of the effect produced by aerosols. In all cases, we’ve chosen to use the MAGICC default settings, which represent the middle-of-the-road estimates for these parameter values.

Also, we’ve had to make some assumptions about the U.S. emissions pathways as prescribed by the original IPCC scenarios in order to obtain the baseline U.S. emissions (unique to each scenario) to which we could apply the Waxman-Markey emissions reduction schedule. The most common IPCC [definition of its scenarios](#) describes the future emissions, not from individual countries, but from country groupings. Therefore, we needed to back out the U.S. emissions. To do so, we identified which country group the U.S. belonged to (the [OECD90 group](#)) and then determined the current percentage of the total group emissions that are being contributed by the United States—which turned out to be ~50%. We then assumed that this percentage was constant over time. In other words, that the

U.S. contributed 50% of the OECD90 emissions in 2000 as well as in every year between 2000 and 2100. Thus, we were able to develop the future emissions pathway of the U.S. from the group pathway defined by the IPCC for each scenario (in this case, the A1B and the A1FI scenarios). The Waxman-Markey reductions were then applied to the projected U.S. emissions pathways, and the new U.S. emissions were then recombined into the OECD90 pathway and into the global emissions total over time. It is the total global emissions that are entered into MAGICC in order to produce global temperature projections—both the original emissions, as well as the emissions modified to account for the U.S. emissions under Waxman-Markey.



Climate Impacts of Waxman-Markey *(Part II) – Global Sign-Up*

Source: <http://masterresource.org/?p=2367>. | May 7, 2009

Yesterday's MasterResource [post](#) looked at the potential climate impacts of the proposed Waxman-Markey Climate Bill. But I limited my analysis to only U.S. actions—after all, Waxman-Markey can't mandate international man-made greenhouse gas reduction timetables. But, what would happen *if* the rest of the world wanted to join in?

The Bottom Line

The ability of the industrialized world, through emissions reductions alone, to impact the future course of global climate is minimal. If the U.S., Canada, Australia, Japan, Europe, and former Soviet countries all limited their emissions of greenhouse gases according to the schedule laid out under Waxman-Markey—a monumental, unexpected development—it would, at most, avoid only a bit more than one-half of a °C of projected global warming (out of 4.5°C— or only about 10%). And this is under worst-case emissions assumptions; middle-of-the-road scenarios and less sensitive climate models produce even less overall impact.

To make any significant in-roads to lowering the rate (and thus final magnitude) of projected global temperature rise, the bulk of the emissions reduction needs to come from other parts of the world, primarily **Asia, Africa, South America,** and the **Middle East**. The problem is, is that these governments are not inclined to restrict the energy usage of its citizens—in fact, they either are in the process of, or are soon hoping to, significantly *expand* the amount of energy available to their (growing) populations—and in the process, subsuming all potential emissions savings from the (current) industrialized world.

If supporters of large greenhouse gas emissions restrictions were really interested in “saving the world,” they would be putting all of their effort into getting China and India to buy into their plan—and then turning to the U.S. up in mop up duty. As it stands now, they are talking to the wrong end of the horse.

Background

Over the first decade of the 21st century, global carbon dioxide emissions have been growing a pretty good clip—in fact, they’ve been growing at a rate which exceeds the projected rate from the most extreme scenario envisioned by the Intergovernmental Panel on Climate Change (IPCC).

It is also the scenario which, when fed into the world’s climate models, produces the greatest warming by the end of the century—about 4.5°C (although the world abounds with observations that suggests that this temperature rise is overblown, but that is the subject of a different analysis).

The question I want to explore here, is, “if we wanted to do something to ameliorate this projected temperature rise, what could we do?” And more specifically, who are “we”?

The proposed Waxman-Markey Climate Bill is aimed to reduce the projected rise in global temperature. This bill calls for a reduction in greenhouse gases from the United States according to the following schedule—a 20% reduction (below the 2005 emissions level) by the year 2020, a 58% reduction by 2030 and a 83% reduction by 2050.

So, let’s take “we” to be Americans bound by the emissions reduction schedule laid out under Waxman-Markey and see what effect that “we” would have on

the projected global temperature increase if “we” followed the Waxman-Markey plan. Then, we’ll look at what would happen if “we” were able to get other parts of the world to go along with the plan.

Technical Analysis

The extreme IPCC scenario is the A1FI scenario and is described as a fossil-fuels intensive scenario of a “future world of very rapid economic growth, global population that peaks in mid-century and declines thereafter, and the rapid introduction of new and more efficient technologies” and that the “[m]ajor underlying themes are convergence among regions, capacity building and increased cultural and social interactions, with a substantial reduction in regional differences in per capita income.”

What this all means in terms of the IPCC’s vision of future CO₂ emissions is shown in Figure 1.

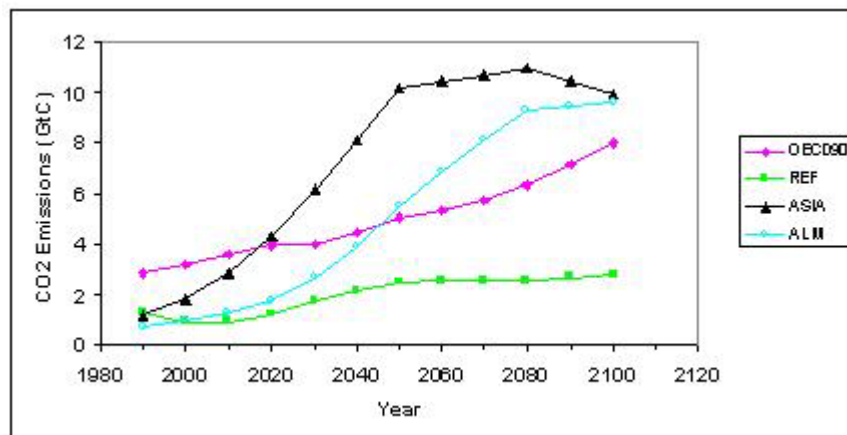


Figure 1. Projected carbon dioxide emissions from four country groupings as defined by the IPCC’s A1FI scenario. For a description of the country groupings, see the text. (Source: [IPCC SRES.](#))

The IPCC breaks the world down into four general classifications —OECD90 (industrialized countries including the U.S., Western Europe, Australia and Japan), REF (countries undergoing economic reform including Eastern Europe, former Soviet Union and Sub-Saharan Africa), ALM (North Africa, Latin America and the Middle East), and ASIA (Asian countries including China and India).

As can be seen in Figure 1, the emissions from each of the groups increase, with most of the increase in the first half of the century coming from the ASIA. In the last few decades of the second half of the 21st century, the IPCC projects the emissions from the OECD90 countries to quickly ramp upwards, despite slowed growth or even declines among other groups and despite little population growth. This seems like an odd expectation, but I digress...

Now, what I am going to do, through the help of [MAGICC](#) (a simple climate model which was developed to emulate the large-scale output of more complex climate models and which was designed to explore the impacts of different emissions scenarios on projected global temperatures), is show you what happens to future global temperature projections if the Waxman-Markey emissions limitation provisions were adopted (and adhered to) by the U.S. And while I'm at it, I'll take you through the impacts of the adoption by the other regions as well.

Figure 2 is the same as Figure 1, except that I have adjusted the future OECD90 emissions to account for a reduced contribution from the U.S. assuming we stick to the Waxman-Markey emissions schedule.

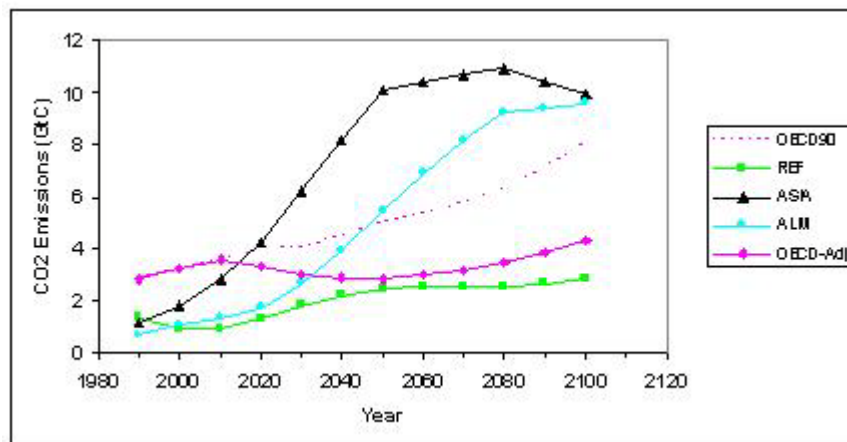


Figure 2. Same as Figure 1, except the original OECD90 pathway (dotted pink line) has been modified to account for the U.S. adherence to the Waxman-Markey emissions schedule (solid pink line).

Figure 3 shows what happens to global temperature projections when the MAGICC model is run with the original A1FI emissions pathways (shown in Figure 1) as well as when it is run under the modified A1FI scenario to include U.S. reductions (shown in Figure 2). The net result on the projected future global

temperatures of a full adherence to the stipulations of the Waxman-Markey Climate Bill is a temperature “savings” of 0.06°C by the year 2050, increasing to about 0.20°C by the end of the century.

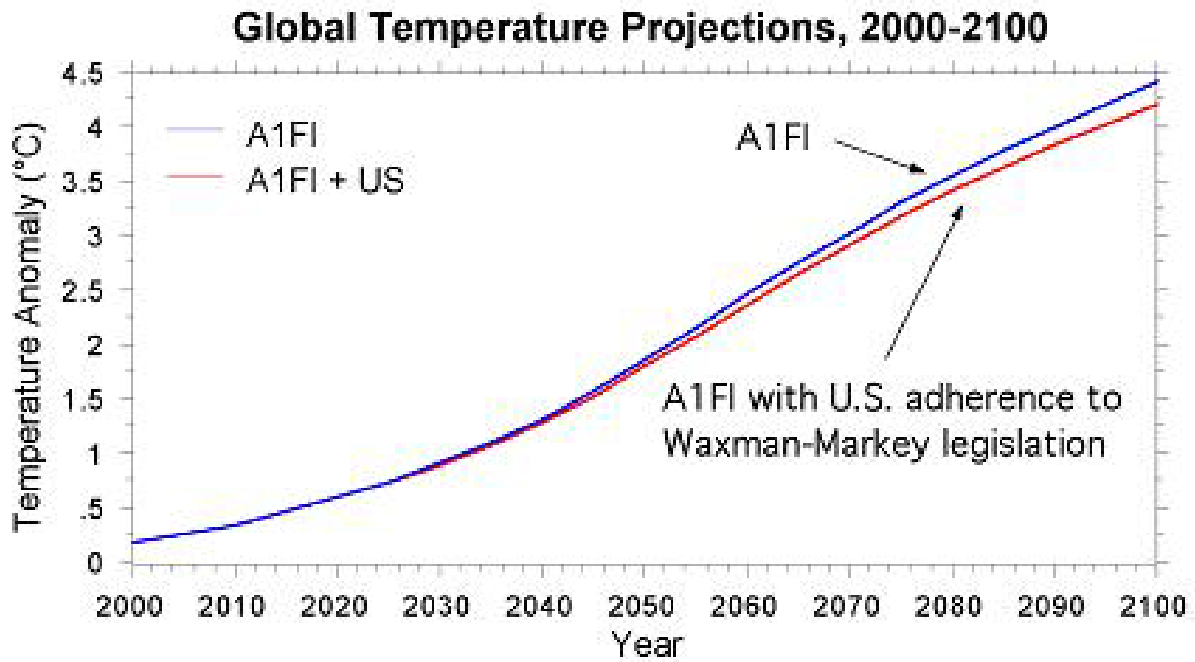


Figure 3. Projected global temperatures under the A1FI scenario (blue) and the A1FI scenario modified for a U.S. adherence to the Waxman-Markey emissions reductions schedule (red).

So, there you have it—going it alone, the U.S. succeeds at only managing to knock off two-tenths of a global temperature rise projected to be nearly 4.5°C by 2100. Not a whole lot of bang for the buck. So, clearly we (Americans) need a little, er, a lot of help.

In Figure 4, I depict what happens to the A1FI emissions pathways if every country of the world decided that the plan drawn up by Representatives Waxman and Markey was something that it could not live without and joined in the effort. Most notably, instead of the rapid rises in ASIA emissions that are projected to occur through the half of the 21st century, the emissions there top out by 2010 and decline sharply thereafter—despite a growing population and rapid industrialization—that’ll be a neat trick to pull off!

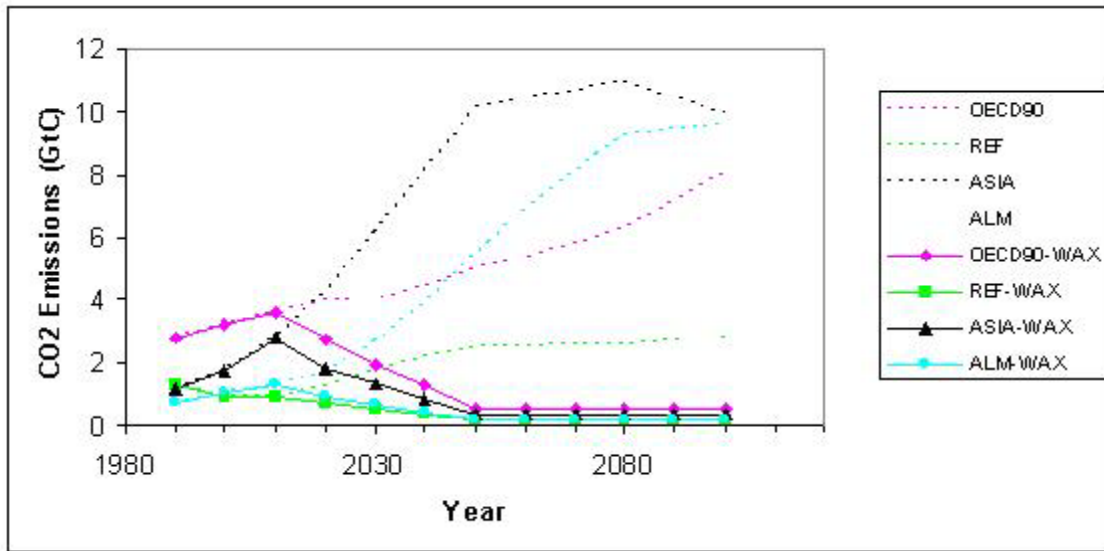


Figure 4. Same as Figure 1, except that all groups adhere to the Waxman-Markey emissions reduction schedule. Dotted lines are the original A1FI pathways, solid lines are the modified pathways.

Figure 5 shows the projected global temperatures with the different country groups signing on (i.e. MAGICC run with the modified emissions scenario depicted in Figure 4).

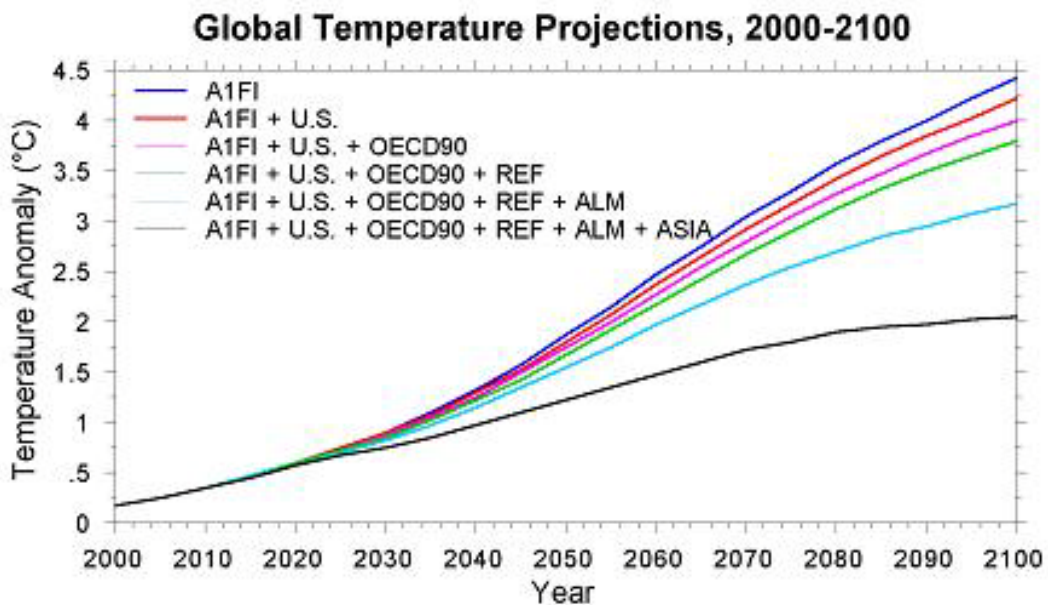


Figure 5. Projected global temperatures under the A1FI scenario (blue) and the A1FI scenario modified for an adherence to the Waxman-Markey emissions reductions schedule by all countries in the world in succession.

The top curve in Figure 5 (the greatest temperature rise) is projected to occur under the unfettered A1FI scenario. The bottom curve (the least temperature rise) occurs with everyone on-board. The curves in the middle show who contributes what. The U.S. acting alone under Waxman-Markey (as we have seen) reduces the projected global temperature rise by the year 2100 by 0.195°C, if the rest of the OECD90 countries come along, the reduction increases to 0.402°C—still less than 10% of the total projected rise. Even with the help of the REF countries, we only get a reduction of 0.602°C. When the temperature rise really starts to show a decent slowdown is with the cooperation of the ALM countries (a reduction 1.241°C). And, of course, the biggest impact, nearly as large as everyone else combined, comes from the ASIA countries. If they alone reduce emissions in line with Waxman-Markey suggestions, they will produce a 1.129°C decline, and when acting along with everyone else they bring the total temperature reduction to 2.37°C—a rise that is more than 50% smaller than projected under the original A1FI scenario. Nothing to sneeze at.

(Again, let me stress that I am describing the impacts on *projected* global temperatures. There is growing evidence that actual global temperatures are not evolving the way projections indicate that they should. So, the degree to which these temperature projections described above reflect what really will happen in the future, is far from certain.)

Conclusion

So, the key to producing a meaningful change in the course of projected global temperatures is to make sure that those countries of the world which are projected to have the greatest contributions to future emissions growth—primarily the countries in the ALM and ASIA group—take the actions to insure that those growth projections are not met.

The United States has an extremely limited direct role to play in projected future global climate—internal emissions reductions do virtually nothing. So, plans like the Waxman-Markey Climate Bill really don't serve to change the climate in and of themselves. Instead, their purpose is to attempt to spur technological innovation and set an example as to what can be done to reduce emissions—with Americans serving both as the experimenters and the guinea pigs. It is not the climate impact of our experiment that is of any significance, but instead it is the tools that we may develop in attempting to achieve major emissions reductions.

for the only truly effective course of action we have available to us in attempting to control the future course of global climate is to tell the rest of the world what to do and how to do it.

Let's hope they are agreeable—for “we” (Americans) are setting ourselves up to take a great risk for which the outcome, both internally and externally, is far from certain.



“Dirty” Waxman-Markey: How Small Can Small Get?

Source: <http://masterresource.org/?p=2515>. | May 11, 2009

“Binding emissions targets for the developing nations are out of the question.”

- Eileen Claussen, Pew Center on Global Climate Change, [March 2009](#).

As I demonstrated in my analyses last week ([here](#) and [here](#)), the impact on global temperatures of U.S. actions to reduce greenhouse gas emissions pursuant to the Waxman-Markey climate bill (which called for a whopping 83% reduction by 2050) was close to nil. Or more precisely, about 0.05°C (0.09°F) by the year 2050, expanding to maybe 0.1°C–0.2°C by the end of the century, depending on, among other things, which future emissions course is assumed as the baseline.

And as the negotiations continue into the specific details of the proposed legislation, the emission reduction schedule has begun to slip—and so too does the potential climate impact.

So what is the temperature impact of a *dirty* Waxman-Markey bill versus the “clean” bill’s 0.05°C/0.09°F? (Hint: divide by half and even half again.)

The answer is provided in **Figure 1**. This figure shows the projected global temperatures for the middle-of-the-road IPCC future emissions scenario (SRES A1B), along with the projected temperatures from three potential iterations of the Waxman-Markey climate legislation—a “clean” version (i.e., 100% of the original emissions reduction schedule), a “dirty” version (i.e., 50% of the original

emissions reduction schedule), and a “dirtier” version (i.e., only 25% of the original emissions reduction schedule). I used the same methodology for this analysis as I described [here](#).

If you can’t tell the different lines in Figure 1 apart, join the club. The original Waxman-Markey emissions reduction schedule, as aggressive as it may seem, does so little to alter the projected course of future global temperatures, that dirtying up the bill makes the original next-to-nothing impacts even less (if that is possible).

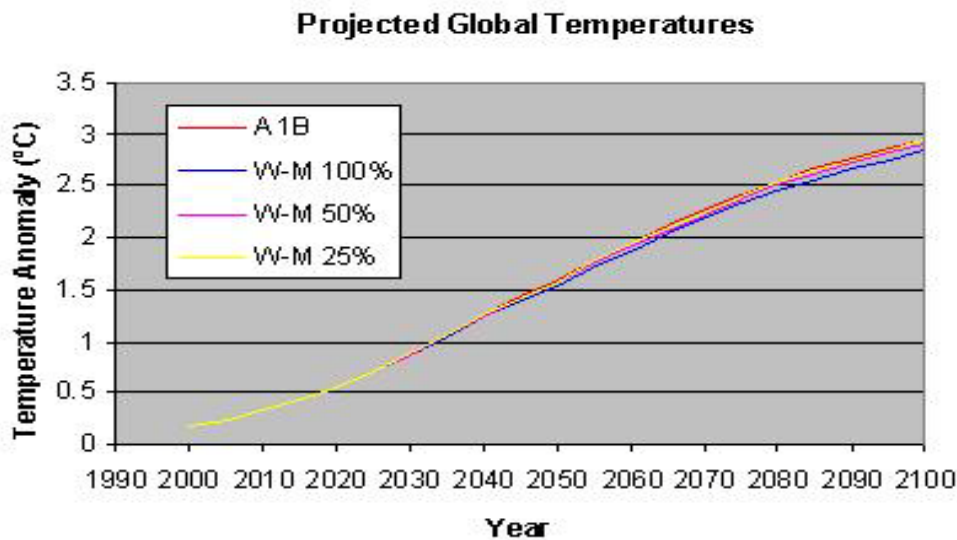


Figure 1. Projected global temperatures from using the IPCC SRES A1B middle-of-the-road emissions scenario, and after adjusting that scenario to reflect the effects of three potential versions of the Waxman-Markey climate bill (100% of the reductions called for in the original draft, 50% of the reductions called for in the original draft, and 25% of the reductions called for in the original draft).

For those interested in the details, I present the global temperature “savings” resulting from my three Waxman-Markey versions in Figure 2. The temperature “savings” are computed as departures from the temperature projections from the IPCC’s original A1B scenario. Here you can see the projected Waxman-Markey climate impact in all its glory. By the year 2050, the “clean” version reduces projected global temperatures by 0.044°C (or ~3% less than the rise without the legislation), the “dirty” version gets you about half of that, or 0.022°C (~1.5% less), and the “dirtier” version saves half of that again, or 0.011°C (<1% less). By century’s end, you don’t do much better—the temperature reduction amounts to, respectively, 0.112°C (0.20°F), 0.046°C (0.08°F), and 0.013°C (0.02°F).

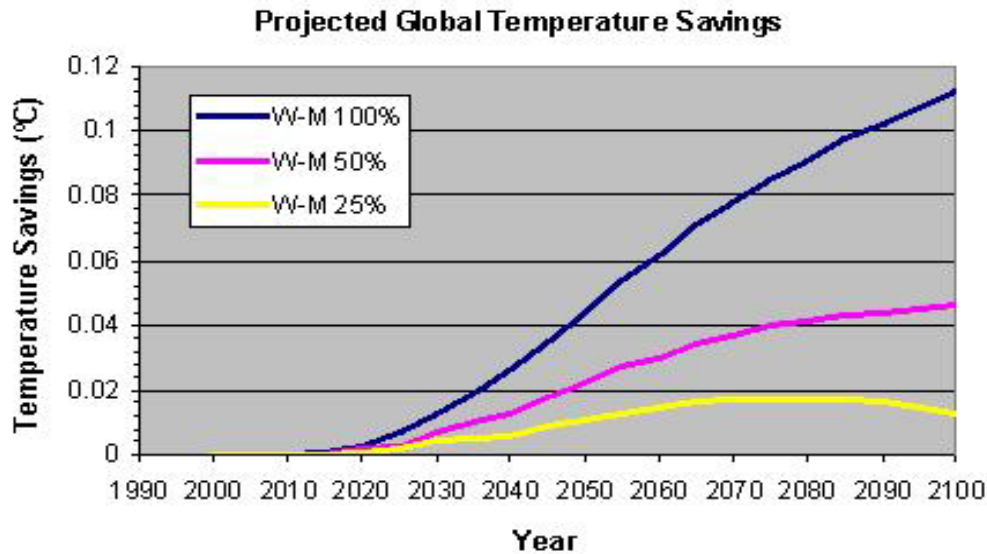


Figure 2. Temperature “savings” resulting from potential versions of the Waxman-Markey climate bill.

None of these numbers represents a scientifically meaningful effect on the future of the global climate or on any impacts that may result from future climate change.

The conclusion of all this: *the U.S. has no role to play in the projected course of global climate through domestic emissions reduction alone.* And as the above quotation by Eileen Claussen of the Pew Center on Global Climate Change makes clear, those in know are forecasting that the U.S. would have to go it virtually alone.

This leads to the undeniable result that for the U.S. to have any meaningful impact in mitigating projected global temperature rise, it must come from our contributions to helping other countries reduce *their* emissions. But with record U.S. budget deficits and the oil, gas, and coal sectors roaring in the developed world, nil will certainly remain nil.

The only way this will change is with the development of new technologies, as existing ones are not up to the task, despite many promises from their advocates.

So while we work to develop a silver-bullet solution, turning attention from (ineffectual) mitigation to adaptation might be a strategy whose time has come.

INDIANA SAYS 'NO THANKS' TO CAP AND TRADE

No honest person thinks this will make a dent in climate change.

by Mitch Daniels | May 15, 2009

This week Congress is set to release the details of the Waxman-Markey American Clean Energy and Security Act, a bill that purports to combat global warming by setting strict limits on carbon emissions. I'm not a candidate for any office – now or ever again – and I've approached the "climate change" debate with an open-mind. But it's clear to me that the nation, and in particular Indiana, my home state, will be terribly disserved by this cap-and-trade policy on the verge of passage in the House.

It's clear to me that the nation, and in particular Indiana, will be terribly disserved by this cap-and-trade policy on the verge of passage in the House.

The largest scientific and economic questions are being addressed by others, so I will confine myself to reporting about how all this looks from the receiving end of the taxes, restrictions and mandates Congress is now proposing.

Quite simply, it looks like imperialism. This bill would impose enormous taxes and restrictions on free commerce by wealthy but faltering powers – California, Massachusetts and New York – seeking to exploit politically weaker colonies in order to prop up their own decaying economies. Because proceeds from their new taxes, levied mostly on us, will be spent on their social programs while negatively impacting our economy, we Hoosiers decline to submit meekly.

The Waxman-Markey legislation would more than double electricity bills in Indiana.

The Waxman-Markey legislation would more than double electricity bills in Indiana.

Years of reform in taxation, regulation and infrastructure-building would be largely erased at a stroke. In recent years, Indiana has led the nation in capturing international investment, repatriating dollars spent on foreign goods or oil and employing Americans with them. Waxman-Markey seems designed to reverse that flow. "Closed: Gone to China" signs would cover Indiana's stores and factories.

Our state's share of national income has been slipping for decades, but it is offset in part by living costs some 8% lower than the national average. Doubled utility bills for low-income Hoosiers would be an especially cruel consequence of the Waxman bill. Forgive us for not being impressed at danglings of welfare-like repayments to some of those still employed, with some fraction of the dollars extracted from our state.

And for what? No honest estimate pretends to suggest that a U.S. cap-and-trade regime will move the world's thermometer by so much as a tenth of a degree a half century from now. My fellow citizens are being ordered to accept impoverishment for a policy that won't save a single polar bear.

We are told that although China, India and others show no signs of joining in this dismal process, we will eventually induce their participation by "setting an example." Watching the impending indigence of the Midwest, and the flow of jobs from our shores to theirs, our friends in Asia and the Third World are far more likely to choose any other path but ours.

And for what? No honest estimate pretends to suggest that a U.S. cap-and-trade regime will move the world's thermometer by so much as a tenth of a degree a half century from now.

Politicians in Washington speak of a reawakened appreciation for manufacturing and American competitiveness. But under their policy, those who make real products will suffer. Already we observe the piranha swarm of green lobbyists wangling special exemptions, subsidies and side deals. The ordinary Hoosier was not invited to this party, and can expect at most only table scraps at the service entrance.

No one in Indiana is arguing for the status quo: Hoosiers have been eager to pursue a new energy future. We rocketed from nowhere to national leadership in biofuels production in the last four years. We were the No. 1 state in the growth of wind power in 2008. And we have embarked on an aggressive energy-conservation program, indubitably the most cost-effective means of limiting CO₂.

Most importantly, we are out to be the world leader in making clean coal – including the potential for carbon capture and sequestration. The world's first commercial-scale clean coal power plant is under construction in our state, and the first modern coal-to-natural gas plant is coming right behind it. We eagerly accept the responsibility to develop alternatives to the punitive, inequitable taxation of cap and trade.

Our president has commendably committed himself to "government that works." But his imperial climate-change policy is government that cannot work, and we humble colonials out here in the provinces have no choice but to petition for relief from the Crown's impositions.

Mr. Daniels, a Republican, is the governor of Indiana.

Source: <http://online.wsj.com/article/SB124234844782222081.html>.

ENERGY MYTHS AND REALITIES

by Keith O. Rattie | April 2, 2009

Good morning, everyone. I'm honored to join you today.

I see a lot of faculty in the audience, but I'm going to address my remarks today primarily to you students of this fine school.

Thirty-three years ago I was where you are today, about to graduate (with a degree in electrical engineering), trying to decide what to do with my career. I chose to go to work for an energy company – Chevron – on what turned out to be a false premise: I believed that by the time I reached the age I am today that America and the world would no longer be running on fossil fuels. Chevron was pouring money into alternatives – and they had lots of money and the incentive to find alternatives – and I wanted to be part of the transition.

Fast forward 33 years. Today, you students are being told that before you reach my age America and the world must stop using fossil fuels.

I'm going to try to do something that seems impossible these days – and that's have an honest conversation about energy policy, global warming and what proposed “cap and trade” regulation means for you, the generation that will have to live with the consequences of the policy choices we make. My goal is to inform you with easily verifiable facts – not hype and propaganda – and to appeal to your common sense. But first a few words about Questar.

Questar Corp. is the largest public company headquartered in Utah, one of only two Utah-based companies in the S&P 500. Most of you know Questar Corp. as the parent of Questar Gas, the utility that sends you your natural gas bill every month. But outside of Utah and to investors we're known as one of America's fastest-growing natural gas producers. We also own a natural gas pipeline company. We have terrific people running each of our five major business units, and I'm proud of what they've done to transform this 85-year old company. We're the only Utah-based company ever to make the Business Week magazine annual ranking of the 50 top-performing companies in the S&P 500 – we were #5 in both 2007 and 2008, and we're #18 in the top 50 in Business Week's 2009 ranking, just out this week.

At Questar our mission is simple: we find, produce and deliver clean energy that makes modern life possible. We focus on natural gas, and that puts us in the “sweet spot” of America's energy future and the global-warming debate. Natural gas currently provides about one-fourth of America's energy needs. But when you do the math, the inescapable conclusion is that greater use of natural gas will be a consequence of any policy aimed at cutting human emissions of carbon dioxide (CO₂). You cut CO₂ emissions by up to 50% when you use natural gas instead of coal to generate electricity. You cut CO₂ emissions by 30% and NO_x emissions by 90% when you use natural gas instead of gasoline in a car or truck – and here in Utah you save a lot of money. You can run a car on compressed

natural gas at a cost of about 80 cents per gallon equivalent. You also cut CO2 emissions by 30-50% when you use natural gas instead of fuel oil or electricity to heat your home.

But you didn't come here for a commercial about Questar and I didn't come here to give you one. Let's talk about energy.

There may be no greater challenge facing mankind today – and your generation in particular – than figuring out how we're going to meet the energy needs of a planet that may have 9 billion people living on it by the middle of this century. The magnitude of that challenge becomes even more daunting when you consider that of the 6.5 billion people on the planet today, nearly two billion people don't even have electricity – never flipped a light switch.

Now, the “consensus” back in the mid-1970s was that America and the world were running out of oil. Ironically, some in the media were also claiming a scientific consensus that the planet was cooling, fossil fuels could be to blame, and we were all going to freeze to death unless we kicked our fossil-fuel habit. We were told we needed

The lesson that we should've learned from the 1970s is that when it comes to deciding how much energy gets used, what types of energy get used, and where, how and by whom energy gets used –that job is too important not to be left to markets.

to find alternatives to oil – fast. That task, we were told, was too important to leave to markets, so government needed to intervene with massive taxpayer subsidies for otherwise uneconomic forms of energy. That thinking led to the now infamous 1977 National Energy Plan, an experiment with central planning that failed miserably. Fast-forward to today, and: déjà vu. This time the fear is not so much that we're running out of oil, but that we're running out of time – the earth is getting hotter, humans are to blame, and we're all doomed if we don't stop using fossil fuels – fast. Once again we're being told that the job is too important to be left to markets.

Well, the doomsters of the 1970s turned out to be remarkably wrong. My bet is that today's doomsters will be proven wrong. Over the past 39 years mankind has consumed nearly twice the world's known oil reserves in 1970 – and today proven oil reserves are nearly double what they were before we started. The story with natural gas is even better – here and around the world enormous amounts of natural gas have been found. More will be found. And guess what? The 30-year cooling trend that led to the global cooling scare in the mid-70s abruptly ended in the late 70s, replaced by a 20-year warming trend that peaked in 1998.

The lesson that we should've learned from the 1970s is that when it comes to deciding how much energy gets used, what types of energy get used, and where, how and by whom energy gets used –that job is too important not to be left to markets.

Now, I'd love to stand here and debate the science of global warming. The media of course long ago declared that debate over – global warming is a planetary emergency, we've got to change the way we live now. I've followed this debate closely for over 15 years. I read everything I get my hands on. I'm an engineer, so I tend to be skeptical

when journalists hyperventilate about science – “World coming to an end – details at 11”. My research convinces me that claims of a scientific consensus about global warming mislead the public and policy makers – and may reflect another agenda.

Yes, planet earth does appear to be warming – but by a not so unusual and not so alarming one degree over the past 100 years. Indeed, global average temperatures have increased by about one degree per century since the end of the so-called Little Ice Age 250 years ago. And, yes CO2 levels in the upper atmosphere have increased over the past 250 years from about 280 parts per million to about 380 parts per million today – that’s .00038. What that number tells you is that CO2 – the gas we all exhale, the gas in a Diet Coke, the gas that plants need to grow – is a trace gas, comprising just four out of every 10,000 molecules in the atmosphere. But it’s an important trace gas – without CO2 in the atmosphere, there would be no life on earth. And yes, most scientists believe that humans have caused much of that increase.

But that’s where the alleged consensus ends. Contrary to the righteous certitude we get from some, no one knows how much warming will occur in the future, nor how much of any warming that does occur will be due to man, and how much to nature. No one knows how warming will affect the planet, or how easily people, plants and animals will adapt to any warming that does occur. When someone tells you they do know, I suggest Mark Twain’s advice: respect those who seek the truth, be wary of those who claim to have found it.

My perspective on global warming changed when I began to understand the limitations of the computer models that scientists have built to predict future warming. If the only variable driving the earth’s climate were manmade CO2 then there’d be no debate – global average temperatures would increase by a harmless one degree over the next 100 years. But the earth’s climate is what engineers call a “non-linear, dynamic system”. The models have dozens of inputs. Many are little more than the opinion of the scientist – in some cases, just a guess. The sun, for example, is by far the biggest driver of the earth’s climate. But the intensity of solar radiation from the sun varies over time in ways that can’t be accurately modeled.

Another example, water vapor is a far more potent greenhouse gas than CO2. [The media now calls CO2 a “pollutant”. If CO2 is a “pollutant” then water vapor is also a “pollutant” – that’s absurd, but I digress.] Some scientists believe clouds amplify human CO2 forcing, others believe precipitation acts as the earth’s thermostat. But scientists do not agree on how to model clouds, precipitation, and evaporation, thus there’s no consensus on this fundamental issue.

But the reality for American consumers is that whether you buy that the science is settled or not, the political science is settled. With the media cheering them on, Congress has promised to “do something”. CO2 regulation is coming, whether it will do any good or not. Indeed, President Obama’s hope of shrinking the now the massive

President Obama’s hope of shrinking the now the massive federal budget deficit depends on vast new revenues from a tax on carbon energy – so called “cap and trade”. Harry Reid has promised cap and trade legislation by August.

federal budget deficit depends on vast new revenues from a tax on carbon energy – so called “cap and trade”. Harry Reid has promised cap and trade legislation by August.

Under cap-and-trade, the government would try to create a market for CO2 by selling credits to companies that emit CO2. They would set a cap for the maximum amount of CO2 emissions. Over time, the cap would ratchet down. In theory, this will force companies to invest in lower-carbon technologies, thus reducing emissions to avoid the cost of buying credits from other companies that have already met their emissions goals. The costs of the credits would be passed on to consumers. Because virtually everything we do and consume in modern life has a carbon footprint the cost of just about everything will go up. This in theory will cause each of us to choose products that have a lower carbon footprint. Any way you slice it, cap and trade is a tax on the way we live our lives – one designed to produce a windfall for government.

The long term goal with cap and trade is “80 by 50”– an 80% reduction in CO2 emissions by 2050. Let’s do the easy math on what ‘80 by 50’ means to you, using Utah as an example. Utah’s carbon footprint today is about 66

Any way you slice it, cap and trade is a tax on the way we live our lives – one designed to produce a windfall for government.

MM tons of CO2 per year. Utah’s population today is 2.6 MM. You divide those two numbers, and the average Utahan today has a carbon footprint of about 25 tons of CO2 per year. An 80% reduction in Utah’s carbon footprint by 2050 implies a reduction from 66 MM tons today to about 13 MM tons per year by 2050. But Utah’s population is growing at over 2% per year, so by 2050 there will be about 6 MM people living in this state. 13

MM tons divided by 6 MM people = 2.2 tons per person per year. Under “80 by 50” by the time you folks reach my age you’ll have to live your lives with an annual carbon allowance of no more than 2.2 tons of CO2 per year.

Question: when was the last time Utah’s carbon footprint was as low as 2.2 tons per person per year? Answer: probably not since Brigham Young and the Mormon pioneers first entered the Salt Lake Valley (1847).

You reach a similar conclusion when you do the math on ‘80 by 50’ for the entire U.S. ‘80 by 50’ would require a reduction in America’s CO2 emissions from about 20 tons per person per year today, to about 2 tons per person per year in 2050. When was the last time America’s carbon footprint was as low as 2 tons per person per year? Probably not since the Pilgrims arrived at Plymouth Rock in 1620.

When was the last time America’s carbon footprint was as low as 2 tons per person per year? Probably not since the Pilgrims arrived at Plymouth Rock in 1620.

In short, ‘80 by 50’ means that by the time you folks reach my age, you won’t be allowed to use anything made with – or made possible by – fossil fuels.

So I want to focus you on this critical question: “How on God’s green earth – pun intended – are you going to do what my generation said we’d do but didn’t – and that’s wean yourselves from fossil fuels in just four decades?” That’s a question that each of you, and indeed, all Americans need to ask now – because when it comes to “how” there

clearly is no consensus. Simply put, with today's energy technologies, we can't get there from here.

The hallmark of this dilemma is our inability to reconcile our prosperity and our way of life with our environmental ideals. We like our cars. We like our freedom to “move about the country” – drive to work, fly to conferences, visit distant friends and family. We aspire to own the biggest house we can afford. We like to keep our homes and offices warm in the winter, cool in the summer. We like devices that use electricity – computers, flat screen TVs, cell phones, the Internet, and many other conveniences of modern life that come with a power cord. We like food that's low cost, high quality, and free of bugs – which means farmers must use fertilizers and pesticides made from fossil fuels. We like things made of plastic and clothes made with synthetic fibers – and all of these things depend on abundant, affordable, growing supplies of energy.

And guess what? We share this planet with 6.2 billion other people who all want the same things.

America's energy use has been growing at 1-2% per year, driven by population growth and prosperity. But while our way of life depends on ever-increasing amounts of energy, we're downright schizophrenic when it comes to the things that energy companies must do to deliver the energy that makes modern life possible.

We want energy security – we don't like being dependent on foreign oil. But we also don't like drilling in the U.S. Millions of acres of prospective onshore public lands here in the Rockies plus the entire east and west coast of the U.S. are off-limits to drilling for a variety of reasons. We hate paying \$2 per gallon for gasoline – but not as much as we hate the refineries that turn unusable crude oil into gasoline. We haven't allowed anyone to build a new refinery in the U.S. in over 30 years. We expect the lights to come on when we flip the switch, but we don't like coal, the source of 40% of our electricity – it's dirty and mining scars the earth. We also don't like nuclear power, the source of nearly 20% of our electricity – it's clean, France likes it, but we're afraid of it. Hydropower is clean and renewable. But it too has been blacklisted – dams hurt fish.

It's about thermodynamics and economics.

We don't want pollution of any kind, in any amount, but we also don't want to be asked: “how much are we willing to pay for environmental perfection?” When it comes to global warming, Time magazine tells us to “be worried, be very worried” – and we say we are – but we don't act that way.

Let me suggest that our conversation about how to reduce CO2 emissions must begin with a few “inconvenient” realities.

Reality 1: Worldwide demand for energy will grow by 30-50% over the next two decades – and more than double by the time you're my age. Simply put, America and the rest of the world will need all the energy that markets can deliver.

Reality 2: There are no near-term alternatives to oil, natural gas, and coal. Like it or not, the world runs on fossil fuels, and it will for decades to come. The U.S. government's own forecast shows that fossil fuels will supply about 85% of world energy demand in 2030 – roughly the same as today. Yes, someday the world may run on alternatives. But that day is still a long way off. It's not about will. It's not about who's in the White House. It's about thermodynamics and economics.

Now, I was told back in the 1970s what you're being told today: that wind and solar power are "alternatives" to fossil fuels. A more honest description would be "supplements". Taken together, wind and solar power today account for just one-sixth of 1% of America's annual energy usage. Let me repeat that statistic – one-sixth of 1%.

Here's a pie chart showing total U.S. primary energy demand today. I "asked" PowerPoint to show a wedge for the portion of the U.S. energy pie that comes from wind and solar. But PowerPoint won't make a wedge for wind and solar – just a thin line.

Over the past 30 years our government has pumped roughly \$20 billion in subsidies into wind and solar power, and all we've got to show for it is this thin line!

To generate electricity comparable to a 1,000 MW gas-fired power plant you'd have to build a wind farm with at least 500 very tall windmills occupying more than 30,000 acres of land.

Undaunted by this, President Obama proposes to double wind and solar power consumption in this country by the end of his first term. Great – that means the line on this pie chart would become a slightly thicker line in four years. I would point out that wind and solar power doubled in just the last three years of the Bush administration. Granted, W. started from a smaller baseline, so doubling again

over the next four years will be a taller order. But if President Obama's goal is achieved, wind and solar together will grow from one-sixth of 1% to one-third of 1% of total primary energy use – and that assumes U.S. energy consumption remains flat, which of course it will not.

The problems with wind and solar power become apparent when you look at their footprint. To generate electricity comparable to a 1,000 MW gas-fired power plant you'd have to build a wind farm with at least 500 very tall windmills occupying more than 30,000 acres of land. Then there's solar power. I'm holding a Denver Post article that tells the story of an 8.2 MW solar-power plant built on 82 acres in Colorado. The Post proudly hails it "America's most productive utility-scale solar electricity plant". But when you account for the fact that the sun doesn't always shine, you'd need over 250 of

But if President Obama's goal is achieved, wind and solar together will grow from one-sixth of 1% to one-third of 1% of total primary energy use – and that assumes U.S. energy consumption remains flat, which of course it will not.

Because our energy choices are ruthlessly ruled, not by political judgments, but by the immutable laws of thermodynamics.

these plants, on over 20,000 acres to replace just one 1,000 MW gas-fired power plant that can be built on less than 40 acres.

The Salt Lake Tribune recently celebrated the startup of a 14 MW geothermal plant near Beaver, Utah. That's wonderful! But the Tribune failed to put 14 MW into perspective. Utah has over 7,000 MW of installed generating capacity, primarily coal. America has about 1,000,000 MW of installed capacity. Because U.S. demand for electricity has been growing at 1-2 % per year, on average we've been adding 10-20,000 MW of new capacity every year to keep pace with growth. Around the world coal demand is booming – 200,000 MW of new coal capacity is under construction, over 30,000 MW in China alone. In fact, there are 30 coal plants under construction in the U.S. today that when complete will burn about 70 million tons of coal per year.

Changing that infrastructure to a system based on renewable energy will take decades and massive new investment.

Why has my generation failed to develop wind and solar? Because our energy choices are ruthlessly ruled, not by political judgments, but by the immutable laws of thermodynamics. In engineer-speak, turning diffused sources of energy such as photons in sunlight or the kinetic energy in wind requires massive investment to concentrate that energy into a form that's usable on any meaningful scale.

Wind and solar can never be relied upon to provide base load power.

What's more, the wind doesn't always blow and the sun doesn't always shine. Unless or until there's a major breakthrough in high-density electricity storage – a problem that has confounded scientists for more than 100 years – wind and solar can never be relied upon to provide base load power.

But it's not just thermodynamics. It's economics. Over the past 150 years America has invested trillions of dollars in our existing energy systems – power plants, the grid, steam and gas turbines, railroads, pipelines, distribution, refineries, service stations, home heating, boilers, cars, trucks and planes, etc. Changing that infrastructure to a system based on renewable energy will take decades and massive new investment.

Wind and solar are not "alternatives" to fossil fuels.

To be clear, we need all the wind and solar power the markets can deliver at prices we can afford. But please, let's get real – wind and solar are not "alternatives" to fossil fuels.

Reality 3: You can argue about whether global warming is a serious problem or not, but there's no argument about the consequences of cap and trade regulation – it's going to drive the cost of energy painfully higher. That's the whole point of cap and trade – to drive up the cost of fossil energy so that otherwise uneconomic "alternatives" can compete. Some put the total cost of cap and trade to U.S. consumers at \$2 trillion over the next decade and \$6 trillion between now and 2050 – not to mention the net loss of jobs in energy-intensive industries that must compete in global markets.

The whole point of cap and trade – to drive up the cost of fossil energy.

Given this staggering cost, I hope you'll ask: will cap and trade work? If Europe's experience with cap and trade is an indication, the answer is "no".

With much fanfare, the European Union (EU) adopted a cap and trade scheme in an effort to meet their Kyoto commitments to cut CO2 emissions to below 1990 levels by 2012. How are they doing? So far, all but one EU country is getting an "F". Since 2000 Europe's CO2 emissions per unit of GDP have grown faster than the U.S.! The U.S. of course did not implement Kyoto – nor did over 150 other countries. There's a good reason why most of the world rejected Kyoto: with today's energy technologies there's no way to sever the link between CO2 emissions and modern life. Europe's cap and trade scheme was designed to fail – and it's working as designed.

Let's do the math to explain why Kyoto would have failed in the U.S. and why Obama's cap and trade scheme is also likely to fail. Americans were responsible for about 5 billion metric tons of CO2 emissions in 1990. By 2005 that amount had risen to over 5.8 billion tons. If the U.S. Senate had ratified the Kyoto treaty back in the 1990s America would've promised to cut manmade CO2 emissions in this country to 7% below that 1990 level – to about 4.6 billion tons, a 1.2 billion ton per year cut by 2012.

There's no way to sever the link between CO2 emissions and modern life.

What would it take to cut U.S. CO2 emissions by 1.2 billion tons per year by 2012? A lot more sacrifice than riding a Schwinn to work or school, or changing light bulbs.

We'd have to get over 60 million Americans and a bunch of American businesses to volunteer to go without electricity.

We could've banned gasoline. In 2005 gasoline use in America caused about 1.1B tons of CO2. That would almost get us there. Or, we could shut down over half of the coal-fired power plants in this country. Coal plants generated about 2 B tons of CO2 in 2005. Of course, before we did that we'd have to get over 60 million Americans and a bunch of American businesses to volunteer to go without electricity.

This simple math is not friendly to those who demand that government mandate sharp cuts in manmade CO2 emissions – now.

Reality 4: Even if America does cut CO2 emissions, those same computer models that predict man-made warming over the next century also predict that Kyoto-type CO2 cuts would have no discernible impact on global temperatures for decades, if ever. When was the last time you read that in the paper? We've been told that Kyoto was "just a first step." Your generation may want to ask: "what's the second step?"

That begs another question: "how much are Americans willing to pay for "a first step" that has no discernible effect on global climate?" The answer here in Utah is: not much, according to a poll conducted by Dan Jones & Associates published in the Deseret News. 63% of those surveyed said they worry about global warming. But when asked how

much they'd be willing to see their electricity bills go up to help cut CO2 emissions, only half were willing to pay more for electricity. Only 18% were willing to see their power bill go up by 10% or more. Only 3% were willing to see their power bill go up by 20%.

Here's the rub: many Europeans today pay up to 20% more for electricity as a result of their failed efforts to sever the link between modern life and CO2 emissions.

So, if Americans aren't willing to pay a lot more for their energy, how do we reduce CO2 emissions? Well, here are several things we should do.

We should rethink our overblown fear of nuclear power.

First, we should improve energy efficiency. Second, we should stop wasting energy. Third, we should conserve energy. Fourth, we should rethink our overblown fear of nuclear power. Fifth, if we let markets work, markets on their own will continue to substitute low-carbon natural gas for coal and oil.

Indeed, 2008 will be remembered in the energy industry as the year U.S. natural gas producers changed the game for domestic energy policy. Smart people in my industry have "cracked the code" – they've figured out how to produce stunning amounts of natural gas from shale formations right here in the U.S. As a result, we now know that America and the world are "swimming" in natural gas. U.S. onshore natural gas production has grown rapidly over the past three years – a feat that most energy experts thought impossible a few years ago. America's known natural gas resource base now exceeds 100 years of supply at current U.S. consumption – and that number is growing. Abundant supply means that natural gas prices over the next decade and beyond will likely be much lower than over the past five years. While prices may spike from time to time in response to sudden, unexpected changes in supply or demand – for example, hurricanes in the Gulf of Mexico or extreme cold or hot weather – these spikes will be temporary.

America's known natural gas resource base now exceeds 100 years of supply at current U.S. consumption – and that number is growing.

Indeed, the price of natural gas today is less than \$24 per barrel equivalent – a bargain, even without taking into account lower CO2 emissions.

Greater use of natural gas produced in America – by American companies who hire American workers and pay American taxes – will help reduce oil imports. Unlike oil, 98% of America's natural gas supply comes from North America.

And get this: we don't need massive investment in new power plants to use more natural gas for electric generation. I mentioned earlier that America has about one million MW of installed electric generation capacity. Forty percent of that capacity runs on natural gas – about 400,000 MW, compared to just 312,000 MW of coal capacity.

But unlike those coal plants, which run at an average load factor of about 75%, America's existing natural gas-fired power plants operate with an average load factor of less than 25%. Turns out that the market has found a way to cut CO2 emissions without

driving the price of electricity through the roof – natural gas’s share of the electricity market is growing, and it will continue to grow – with or without cap and trade.

Sixth, your generation needs to focus on new technology and not just assume it, as many in my generation did back in the 70s – and as many in Congress continue to do today. Just one example: there’s no such thing as “clean” coal, though I should quickly add that given America and the world’s dependence on coal for electric generation, we do need to fund R&D aimed at capturing and storing CO₂ from coal plants.

To be sure, CO₂ capture and sequestration (underground storage) will be hugely expensive and it’ll take decades to implement on any meaningful scale. The high costs will be passed through in electricity rates to consumers. To transport massive amounts of CO₂ captured at coal plants we’ll have to build a massive pipeline grid that some estimate could be comparable to our existing natural gas pipeline grid. Then we’ll have to drill thousands of wells to store CO₂ in the ground.

To be sure, CO₂ capture and sequestration (underground storage) will be hugely expensive and it’ll take decades to implement on any meaningful scale. The high costs will be passed through in electricity rates to consumers.

The facilities required to inject CO₂ into the earth will use huge amounts of energy – which ironically will come from fossil fuels, negating some of the carbon-reduction benefits. And where are we going to put all this CO₂? Questar owns and operates underground natural gas storage facilities. Gas storage is in high demand – we’re always looking for suitable underground formations. But I can tell you that there aren’t many.

Seventh (for anyone who’s still counting!) it’s time to have an honest conversation about alternative responses to global warming than what will likely be a futile attempt to eliminate the use of fossil fuels. What about adapting to warming? In truth, while many scientists believe man’s use of fossil fuels is at least partly responsible for global warming, many also believe the amount of warming will be modest and the planet will easily adapt. Just about everyone agrees that a modest amount of warming won’t harm the planet. In fact, highly respected scientists such as Harvard astrophysicist Willie Soon believe that added CO₂ in the atmosphere may actually benefit mankind because more CO₂ helps plants grow. When was the last time you read that in the paper?

The media dwells on the potential harm from global warming, but ignores the fact that the costs borne to address it will also do harm.

You’ve no doubt heard the argument that even if global warming turns out not to be as bad as some are saying, we should still cut CO₂ emissions – as an insurance policy – the so-called precautionary principle. While appealing in its simplicity, there are three major problems with the precautionary principle.

First, none of us live our lives according to the precautionary principle. Let me give you an example. Around the world about 1.2 million people die each year in car accidents – about 3,200 deaths a day. At that pace, 120 million people will die this century in a car wreck somewhere in the world. We could save 120 million lives by imposing a 5 MPH

speed limit worldwide. Show of hands: how many would be willing to live with a 5 MPH speed limit to save 120 million lives? Most of us won't – we accept trade-offs. We implicitly do a cost-benefit analysis and conclude that we're not going to do without our cars, even if doing so would save 120 million lives. So before we start down this expensive and likely futile cap and trade path, don't you think we should insist on an honest analysis of alternative responses to global warming?

Second, the media dwells on the potential harm from global warming, but ignores the fact that the costs borne to address it will also do harm. We have a finite amount of wealth in the world. We have a long list of problems – hunger, poverty, malaria, nuclear proliferation, HIV, just to name a few. Your generation should ask: how can we do the most good with our limited wealth? The opportunity cost of diverting a large part of current wealth to solve a potential problem 50-100 years from now means we do “less good” dealing with our current problems.

Third, economists will tell you that the consequence of a cap and trade tax on energy will be slower economic growth. Slower growth, compounded over decades, means that we leave future generations with less wealth to deal with the consequences of global warming, whatever they may be.

More polar bears die each year from gunshot wounds than from drowning.

In truth, humans are remarkably adaptive. People live north of the Arctic Circle where temperatures are below zero most of the year. Roughly one-third of mankind today lives in tropical climates where temperatures routinely exceed 100 degrees. In fact, you can take every one of the theoretical problems caused by global warming and identify lower-cost ways to deal with that problem than rationing energy use. For example, if arctic ice melts and causes the sea level to rise, a wealthier world will adapt over time by moving away from the beach or building retaining walls to protect beachfront property. Fine, you say. But how do we save the polar bear? I'd first point out that polar bears have survived sometimes dramatic climate changes over thousands of years, most recently the so called “medieval warm period” (1000-1300 A.D.) in which large parts of the arctic glaciers disappeared and Greenland was truly “green”. Contrary to that heart-wrenching image on the cover of Time of an apparently doomed polar bear floating on a chunk of ice, polar bears can swim for miles. In addition, more polar bears die each year from gunshot wounds than from drowning. So instead of rationing carbon energy, maybe the first thing we should do to protect polar bears is to stop shooting them!

Energy choices favored by politicians but not confirmed by markets are destined to fail.

Let me close by returning to the lessons my generation learned from the 1970s energy crisis. We learned that energy choices favored by politicians but not confirmed by markets are destined to fail. If history has taught us

anything it's that we should resist the temptation to ask politicians to substitute their judgments for that of the market, and let markets determine how much energy gets used, what types of energy get used, where, how and by whom energy gets used. In truth, no source of energy is perfect, thus only markets can weigh the pros and cons of each source. Government's role is to set reasonable standards for environmental performance, and make sure markets work.

I've covered a lot of ground this morning. I hope I've challenged your thinking about your energy future. Mostly, I hope you continue to enjoy freedom, prosperity – and abundant supplies of energy at prices you can afford! Thank you for your attention, and now I'll be glad to take rebuttal!

Keith O. Rattie is Chairman, President and CEO of Questar Corporation.

CARBON CREDITS: ANOTHER CORRUPT CURRENCY?

The real hockey-stick graph

by Joanne Nova | February 2, 2009

Carbon credits in all their forms are just another type of fiat currency—something created out of nothing by government edict. They have a long history of failure, corruption and fraud. Fiat currencies and the inevitable inflation that comes with them, act as an invisible tax, and transfer wealth from people who work and save to speculators, middle men, and crooks. The US dollar is on life-support, as thousands of billions of new dollars are being created from thin air in order to stop the banking system from crashing. Life savings and institutions that have taken decades to build are being destroyed overnight as the fiat currency Ponzi scheme unravels.

Meanwhile, global warming alarmists are asking us to create another fiat currency, this time based on hot air. Large multinational conglomerates are already pouring billions into exchanges and derivatives in anticipation of carbon trading. There are 'options' to buy credits in the future.

There's no longer any evidence that carbon matters much to our climate; and in the unlikely event that carbon might matter, the benefits of trading carbon don't add up. If the US adopted Obama's strict 80% reduction in emissions tomorrow, thus transforming the main energy source used by Americans since Columbus¹, the savings in carbon merely delay the warmer-Armageddon by six years.

Currencies based on nothing are powerful tools that have reshaped civilizations. But they draw out the darkest elements of human nature. We open this Pandora's Box with trepidation. Is the risk worth the benefit?

Our Failing Fiats

A fiat currency is any form of money that has no intrinsic value other than by government decree. It is not backed by any commodity or good. Instead dollars, pounds, euros, yen, and renhimbi are all glorified IOU's, backed only by government promises. Humans being human, it's no surprise that historically, fiat currencies have always disintegrated under the weight of human temptation to get something for nothing. As they collapse, the inevitable collateral is a litany of tragic outcomes—life savings disappear, marriages fail, some lose the will to live and on distant shores, people starve.

The current US dollar has only been a true fiat currency since 1971 when the gold standard was finally completely abandoned. Since then its value has dropped by four fifths (and that's using the official BLS² calculator, in reality it's probably fallen further).

What we witness now is the painful crisis point – a gathering of corruption, fraud and self interest.

What we witness now is the painful crisis point – a gathering of corruption, fraud and self interest.

All fiat currencies are inflating at the moment. Uncle Sam provides a great example of how artificial growth in a fiat currency feeds false prophets—like Bernie Madoff; encourages corruption—think of Enron; and seeds stupidity—think of home loans to unemployed fruit pickers. The sub-prime crisis wouldn't have happened if there hadn't been easy loans, to fuel dumb decisions.

The US Economy is on Life Support!

The US currency and the economy are implacably tied to each other. The economy is currently shrinking, and the currency is undergoing open-heart surgery.

Right now, the people of the United States, through their government, owe over 10.6 trillion dollars³—around \$35,000 per person (that's in addition to personal debts like mortgages, credit cards, and margin loans). Worse, according to Richard Fisher⁴ from the Federal Reserve, if you include unfunded future liabilities and use General Accepted Accounting Principles (GAAP), the nation has promised 99 trillion dollars to its citizens that it can't find. That's an extra ninety nine thousand billion dollars the country has to produce in coming decades to pay future health and welfare costs. To balance the books the average citizen needs to pay \$300,000 more to the government—above and beyond the taxes and fees they already pay. If the USA were a company it would be in receivership: unable to meet its commitments.

As far as the currency goes, once or twice a century our monetary system breaks. To get an idea of the scale of the current crisis look at the Federal Reserve Bank graph⁵ of the monetary base. It's a graph to take your breath away.

This is the real hockey stick graph.

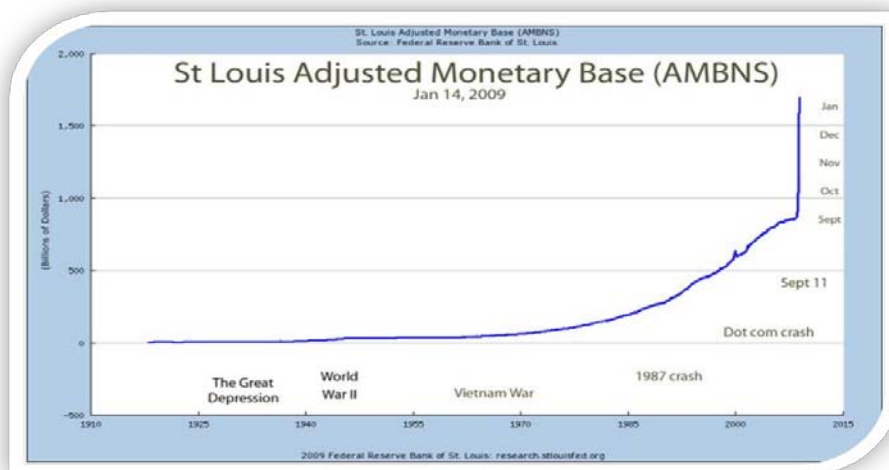


Figure 1: Base money has grown almost vertically since September 2008.

The US money base is the total of all currency and reserves of commercial banks in the central bank itself. It's the narrowest form of monetary aggregate (but getting fatter fast). It took 95 years for the monetary base to grow to a total of 900 billion dollars. In the last four months, it doubled.

It took 95 years for the monetary base to grow to a total of 900 billion dollars. In the last four months, it doubled.

This is what the start of hyperinflation would look like.

Nothing bar anything has touched the US money supply with this much impact. Not the Great Depression, and not World War II. As the bail-outs grow by the minute, the hockey stick from Hell becomes more extreme: the spikes of all previous crashes and booms shrink to goosebumps as the scale of the graph is redrawn.

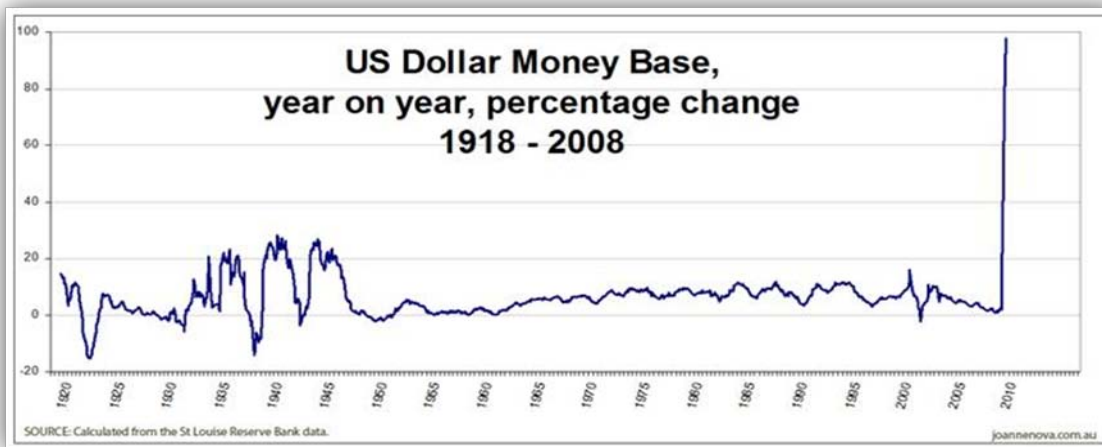


Figure 2: This graph compares the proportionate changes in base money supply. At its worst in WWII, base money expanded by no more than 28% in any 12 month period. Currently it's expanding over three times faster.

Bear in mind that during WWII, the nation was consumed and remade. Four hundred

Inflation sucks purchasing power from every US dollar, but not equally, not fairly – the longer you save, the more it

thousand citizens died: that's eighty-six times as many casualties as the War in Iraq has accumulated so far, yet the money base growth was sedate in comparison. This is clearly a defining moment for the nation.

Like all fiat currencies, this new money is made from thin air, backed only by government promises that it's worth something. The money isn't 'pumped' from some deep mythical vault, instead, numbers are created in bank accounts each time someone takes out a loan. The only

thing that moves is binary code. Since new money competes with old money, it's hard to imagine how it won't lead to higher bids, higher prices, and thus, inflation. So ultimately, it's not taxpayers paying for the bailouts—it's every holder of the US dollar: including retirees in RV's, hobos without homes, and preschoolers with pocket-money. Inflation sucks purchasing power from every US dollar, but not equally, not fairly – the longer you save, the more it sucks.

There is no way through the god of taxation that the US government can rescue it's balance sheet. Fisher points out that the government would need to pull in two thirds more tax revenue each year, every year, ad infinitum, or cut discretionary spending by an unthinkable 97%. The fate of the US dollar hangs in the balance. There are only two ways out:

1. *Salvation through Inflation:* The cheat's way. Think 'Weimar Republic' and wheelbarrows of cash—all debts become payable as dollars are created from thin air and the US dollar devalues. It didn't work that well for the Germans, Hungarians, or Argentinians. And there's no rush to migrate to Zimbabwe right now.
2. *Prosperity through Productivity:* The hard work way—and usually, the American way. Fix the trade deficit by making things other countries want.

The best way for the US to get out of this mess is by making real goods and services to export. Anything that hinders that productivity should be put under a microscope.

Since carbon underlies most forms of energy generation and agriculture, it's obvious that a tax on carbon could not possibly enhance the productivity of these central industries—at least not until a realistic alternative could be found, tested and mass produced. Energy use on its own accounts for 7-8% of the entire GDP.

***It's a given that if
there are
unscrupulous
players out there
– these markets
will attract them.***

The Dark Side of Any Financial Game

We can see the potential future and risks of carbon markets by looking closely at the money markets.

Neither dollars or carbon credits, are backed by any hard fast fixed material good. Indeed the carbon market is based on a nullity—the traded 'good' is vacant atmosphere or air with *less* carbon. Therefore both currencies are open to fraud and corruption. It's a given that if there are unscrupulous players out there – these markets will attract them.

'Sub-prime Carbon' is Coming

As an example of how this financial behavior can bring down not only its participants, but also unrelated, distant players, consider the derivatives market. It's a good example both of how our current financial system is verging on collapse, and also why we should think very carefully about creating any new financial markets based on 'hot air'.

The last six months of world finance have been dominated behind the scenes with the ever present threat of the one-quadrillion-dollar-derivative-bomb. One quadrillion (or 1,000 trillion) is the rough total of the notional value of financial derivative agreements (and no, that's not a typo, it's based on estimates from the Bank of International Settlements)^{6, 7}. These unregulated, non standardized agreements between companies were originally designed to work as 'insurance' or ways of hedging risk. But because they

Not coincidentally some of the biggest potential traders of carbon credits are the same fiscally 'responsible' corporations that managed the rest of the economy so well.

could be manipulated to help avoid tax, and bolster profits (or just profit reporting), they've grown far beyond all pretence of being 'insurance'. For example, some of these agreements 'guaranteed payments for bonds or treasuries'—so they appeared to reduce the risk of default to zero—therefore companies who bought these agreements could book, say, ten years in profit immediately, whip up their share prices, and cash in their options, 'thanks for the money'.

For the most part these notional derivative amounts would, theoretically cancel each other out, but the big problem is that if one pin in the complex array of agreements collapses (like say, Lehman Bros), that suddenly exposes many companies who used Lehman as a counterparty to huge payments that they never thought they'd have to make. The numbers and values are astronomical. Worldwide GDP is around \$50 trillion dollars, so if just 5% of the agreements fail, that would take out the equivalent of a whole year of global human effort and production. The derivative agreements were an accident waiting to happen. Worse, the potential for one failure to wipe out, domino style, almost every major finance corporation means that governments can't allow any to fail. Hence they rescue or arrange 'take-overs' of all and sundry, so as not to trigger the derivative bomb.

Not coincidentally some of the biggest potential traders of carbon credits are the same fiscally 'responsible' corporations that managed the rest of the economy so well. These are the same pool of traders who bet \$1 trillion on Credit Default Swaps for General Motors and its bonds—all while GM had a market capitalization of just \$11 billion⁸. In other words, the 'insurance' was supposedly (and nonsensically) worth 100 times the value of the company. The markets have become a glorified casino. Unleashing a new form of currency – carbon credits – invites all the same speculative risk, and gives financial sharks a different market to target.

All past efforts at managing fiat currencies have so far eventually failed—and ‘eventually’ can arrive all too soon. The US dollar is a product of arguably the strongest capitalist oriented democracy in the world, yet even so, the current US dollar and banking system is on the brink of collapse. The US dollar today is the fourth incarnation since 1775, the first one—known as a ‘Continental’ was inflated to oblivion within a mere six years. It’s “not worth a continental”, as citizens of that continent came to say.

The human hunt for ‘free lunches’ crosses borders and eras. Roman emperors steadily diluted their Denarius until a 94% pure silver coin dropped to just 0.05% ‘silver’. Being pre-modern they took 300 years to accomplish ‘devaluation-wise’ what the US has achieved in the last 110. But even as Rome collapsed they still had 0.05% more silver in their coins than the coins from the United States Mint currently have.

The Chinese cottoned onto the easy lifestyle of a paper currency almost a thousand years ago, creating possibly the earliest form of ‘crack up boom’. At one point in the Song and Yuan dynasties China had as many as a million in their standing army and the largest navy in the world. The nation flowered with potential in science, literature and art, but the aftermath of the failed paper money era, lasted hundreds of years.

The French tried at least three times, and their paper Franc in the 1930s lost 99% of its value in just 12 years.

Argentina was one of the ten most prosperous countries in the world earlier in the 20th Century, but after bouts of inflation—especially a notorious episode in 2001-2002—the middle class were financially ruined, about half the population lives below the poverty line, and unemployment reached 25% in 2003.

The list of nations that have tried and failed with paper currencies tells its own story: Angola, Austria, Bosnia, Bolivia, Brazil, Chile, China, Germany, Greece, Hungary, Japan, Poland, Philippines, Romania, Russia, Turkey, Ukraine, Yugoslavia, Zaire, and of course Zimbabwe. It’s not like rampant inflation is an *unusual* event.

Thomas Jefferson warned of the damage that would be caused if the people gave control over any currency to the banking sector:

"I believe that banking institutions are more dangerous to our liberties than standing armies. If the American people ever allow private banks to control the issue of currency, first by inflation, then by deflation, the banks and corporations that will grow up around them will deprive the people of all property until their children will wake up homeless on the continent their fathers conquered."

Sure, just because other currencies have failed and wreaked havoc, doesn’t prove that a carbon currency won’t work. It’s possible that for the first time in human history, we

Unleashing a new form of currency – carbon credits – invites all the same speculative risk, and gives financial sharks a different market to target.

might get the regulation right, enforce the accounting, and fix the legal loopholes. But if most of the leading democratic sovereign nations can't keep their own currencies from imploding, what chance is there for an international currency that buys and sells theoretical atmospheric nullities in the third world?

The bill for *enforcing* carbon credits might end up costing more than the credits themselves.

The Carbon Casino has Opened for Business

The carbon market was worth \$118 billion in 2008⁹ so it is already far advanced. There are exchanges in Chicago, Montreal, and in Europe, and you can buy Certified Emissions Reductions (CER—the Kyoto protocols main offset), or European Union Allowances (EUA's), Carbon Financial Instruments (CFI), and Regional Greenhouse Gas Initiative (RGGI) Futures Contracts.

The Australian Securities Exchange plans to make carbon futures and renewable energy futures available in 2009. The government has not finalized the Carbon Pollution Reduction scheme, which it plans to launch in 2010, but the punters are in already, presumably betting-by-default on whether it will be approved.

Given the risks of corruption, fraud, slower growth and unemployment, the first place to start any carbon market is with the question – what's the evidence? After all, if there is no evidence that carbon matters, there's no reason to take the

Carbon credits behave like any fiat currency. The European Union issued too many carbon permits; the price of said permits fell to less than \$1 per ton of CO₂; no one cut emissions, and the scheme collapsed.

Companies in Europe found it was cheaper to buy permits from China through something called the Clean Development Mechanism (CDM). As usual, the intentions are good—if it's cheaper to help the third world cut emissions than do it at home, then why not? But the practice, as always, is complexified to the point of absurdity. To qualify, a project has to prove it would *not* go ahead without the subsidy, (so this 'free market solution' ends up rewarding marginal efforts with questionable returns, proving that in practice, it's anything but 'free'). One project in China got around this rule by just ignoring it—allegedly submitting an application two years after the construction of the dam began.

Another requirement is that the environmental projects the CDM's sponsor are built with local community approval—something that must be very difficult to monitor in a country with a human rights record like China.

In India, ten thousand people protested in 2005 at plans for the largest Sponge Iron Plant in the world to expand even further. It is already collecting funding from four

separate CDM projects, and is accused of land grabs and ironically, creating local pollution¹⁰.

In 2006 the NY times reported that one chemical factory in China was such a source of pollution that it's emissions were equivalent to those from a million American cars, each driven 12,000 miles.¹¹ An incinerator to clean up the factory would cost \$5 million dollars, yet because the factory is such a source of pollution, foreign companies will end up paying \$500 million for the incinerator. The enormous profits would go to the factory owners, a government fund and the London bankers who arranged it.

A Currency We Don't Have to Have

Given the risks of corruption, fraud, slower growth and unemployment, the first place to start any carbon market is with the question – what's the evidence? After all, if there is no evidence that carbon matters, there's no reason to take the risk in creating a new currency.

Note that in science 'evidence' has a very specific meaning, and it's not the same as that of politics and law. Since science aims to discover natural laws, the only evidence that counts comes from the natural world—for example, observations about the temperature, or the composition of ice cores. Opinions, text books and committees don't prove anything about the natural world. If the evidence is overwhelming, it should be easy.

But the question remains unanswered: *“What's the evidence that man-made CO2 makes much difference to our climate?”* So far no one can answer it without using the words 'IPCC', 'consensus', 'mainstream', 'expert', or 'computer model'.

Dr. David Evans pointed out the lack of evidence in *The Australian* on July 18, 2008¹². Despite the widespread coverage of this article, to date no one has refuted it by providing empirical evidence. Replies fall into four categories.

1. *“The IPCC says so, and there is mainstream consensus.”* — There is no consensus, it wouldn't prove anything if there was, and the IPCC is a UN committee that was set up to find evidence of anthropogenic greenhouse warming.
2. *Computer Models* — Models are made of assumptions built on estimations, amplified by conjecture. They are a series of calculations and thus theory, not evidence.
3. *Laboratory Theory* — Test tube experiments don't match real world measurements. The “greenhouse effect” has almost no effect in a real greenhouse (the warming is almost entirely due to convection), which undermines the idea that greenhouse gases have much effect in the real atmosphere.
4. *Irrelevant Evidence* — Proof of global warming is not proof that CO2 is the cause. Icebergs would melt even if a team of UFOs were heating the planet with ray guns.

A tax review cannot seriously recommend setting up an Emissions Trading Scheme based solely on a laboratory theory, inadequate inaccurate computer models, or the decree of a UN committee.

The Russians were always skeptics, and would no doubt prefer a spot of warming. If they join in, it's only because the west would be worse off.

There is grave danger that the reviewers who recommended an Emission Trading Scheme, and the government who instigated it, would both be seen as negligent, when newer scientific evidence has been available since 2006 that shows that on balance, carbon appears to have at most a minor role.

If carbon has very little effect on our climate, the benefits of any carbon trading scheme would be next to nothing, or if we're lucky, a pleasant accident. If money is transferred to the third world from the workers of Europe, it doesn't necessarily help a single soul if the money ends up in the pockets of petty local bureaucrats, and corrupt bankers. It could even do more harm than good—providing funds for large companies to ride roughshod over community based groups, and giving more power to the equivalent of the third world mafia.

Hoping for a happy outcome is no reason to risk hand-feeding financial sharks.

The Pointlessness of Slowing Carbon Emissions

Not only is there no evidence that carbon matters, even if carbon was a *serious threat*, reducing it makes very little difference unless it is done in a coordinated international way—which is already an impossibility, since the Indian government has flatly stated it will not join in. China is too smart to be swung by western propaganda, so if it does join in, it's only because they're financially better off for saying, 'Yes Please'. (Why fight westerners who send you money for projects you were going to do anyway?) The Russians were always skeptics, and would no doubt prefer a spot of warming. If they join in, it's only because the west would be worse off.

The reviewers who recommended an Emission Trading Scheme, and the government who instigated it, would both be seen as negligent, when newer scientific evidence has been available since 2006 that shows that on balance, carbon appears to have at most a minor role.

The tables attached in Appendix I show just how insignificant any state based system would be—even if the state stopped emitting CO₂ in entirety. For example, using the exaggerated IPCC estimates, cutting *all* carbon emissions from California *immediately* would theoretically stop global sea levels from rising by less than a millimeter by 2050—

which would surely qualify as one of the most expensive, unquantifiable outcomes that any committee ever aimed for.

Conclusion

Any new tax lets bankers, lawyers, politicians, con men and crooks slice more money from the people who are building, making, healing or teaching. The potential new renewable technologies sound great, but restoring vision to blind children only costs 27 pounds per child¹³, so \$100 million spent on a wind farm could have been used to rescue 151,000 blind children.

\$100 million spent on a wind farm could have been used to rescue 151,000 blind children.

Suddenly when a windfarm has a human cost, it doesn't appear so attractive. Whatever we spend our money on is where we spend our brain power, our skill, our sweat—since it's always at the expense of something else, we ought spend it wisely.

The US position as THE global hegemon is under a cloud, and parties are claiming that power is shifting as we speak. With the US economy based on a precipice, and no evidence left that atmospheric carbon matters, now is *not* the time to dump the energy source the nation was built on and tax everything that moves.

Using a fiat currency system to control a harmless natural gas is like using a combine harvester to prune the roses. It might get the job done, but there's a risk you'll lose the house.

Appendix I

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

Table 1

State-by-State Analysis of Carbon Dioxide Emissions¹⁴

State	2005 Emissions (million metric tons CO ₂)	Percentage of Global Total	Time until Total Emissions Cessation Subsumed by Foreign Growth (days)		Temperature "Savings" (°C)		Sea Level "Savings" (cm)	
			Global Growth	China Growth	2050	2100	2050	2100
AK	48.1	0.18	18	29	0.0009	0.0013	0.0110	0.0222
AL	142.2	0.52	54	85	0.0025	0.0038	0.0326	0.0656
AR	61.2	0.23	23	37	0.0011	0.0016	0.0140	0.0282
AZ	97.7	0.36	37	59	0.0017	0.0026	0.0224	0.0451
CA	395.5	1.45	150	237	0.0070	0.0105	0.0906	0.1825
CO	96.0	0.35	37	57	0.0017	0.0026	0.0220	0.0443
CT	44.4	0.16	17	27	0.0008	0.0012	0.0102	0.0205
DC	3.9	0.01	1	2	0.0001	0.0001	0.0009	0.0018
DE	17.7	0.07	7	11	0.0003	0.0005	0.0041	0.0082
FL	262.6	0.97	100	157	0.0047	0.0070	0.0601	0.1211
GA	185.7	0.68	71	111	0.0033	0.0049	0.0425	0.0857
HI	23.4	0.09	9	14	0.0004	0.0006	0.0054	0.0108
IA	81.3	0.30	31	49	0.0014	0.0022	0.0186	0.0375
ID	15.7	0.06	6	9	0.0003	0.0004	0.0036	0.0072
IL	250.4	0.92	95	150	0.0045	0.0067	0.0573	0.1155
IN	237.9	0.88	91	142	0.0042	0.0063	0.0545	0.1098
KS	72.8	0.27	28	44	0.0013	0.0019	0.0167	0.0336
KY	153.8	0.57	59	92	0.0027	0.0041	0.0352	0.0709
LA	183.1	0.67	70	110	0.0033	0.0049	0.0419	0.0845
MA	85.1	0.31	32	51	0.0015	0.0023	0.0195	0.0393
MD	83.4	0.31	32	50	0.0015	0.0022	0.0191	0.0385
ME	22.9	0.08	9	14	0.0004	0.0006	0.0052	0.0106
MI	192.3	0.71	73	115	0.0034	0.0051	0.0440	0.0887
MN	103.0	0.38	39	62	0.0018	0.0027	0.0236	0.0475

MO	142.8	0.53	54	86	0.0025	0.0038	0.0327	0.0659
MS	63.1	0.23	24	38	0.0011	0.0017	0.0145	0.0291
MT	36.2	0.13	14	22	0.0006	0.0010	0.0083	0.0167
NC	155.6	0.57	59	93	0.0028	0.0041	0.0356	0.0718
ND	52.8	0.19	20	32	0.0009	0.0014	0.0121	0.0244
NE	43.6	0.16	17	26	0.0008	0.0012	0.0100	0.0201
NH	21.3	0.08	8	13	0.0004	0.0006	0.0049	0.0098
NJ	133.4	0.49	51	80	0.0024	0.0036	0.0306	0.0616
NM	59.5	0.22	23	36	0.0011	0.0016	0.0136	0.0274
NV	50.1	0.18	19	30	0.0009	0.0013	0.0115	0.0231
NY	212.2	0.78	81	127	0.0038	0.0056	0.0486	0.0979
OH	274.0	1.01	104	164	0.0049	0.0073	0.0628	0.1264
OK	107.7	0.40	41	64	0.0019	0.0029	0.0247	0.0497
OR	42.5	0.16	16	25	0.0008	0.0011	0.0097	0.0196
PA	284.0	1.04	108	170	0.0051	0.0076	0.0650	0.1310
RI	11.1	0.04	4	7	0.0002	0.0003	0.0025	0.0051
SC	86.0	0.32	33	51	0.0015	0.0023	0.0197	0.0397
SD	13.3	0.05	5	8	0.0002	0.0004	0.0031	0.0062
TN	125.9	0.46	48	75	0.0022	0.0034	0.0288	0.0581
TX	625.2	2.30	238	374	0.0111	0.0166	0.1432	0.2884
UT	67.2	0.25	26	40	0.0012	0.0018	0.0154	0.0310
VA	130.6	0.48	50	78	0.0023	0.0035	0.0299	0.0603
VT	6.8	0.03	3	4	0.0001	0.0002	0.0016	0.0031
WA	83.8	0.31	32	50	0.0015	0.0022	0.0192	0.0387
WI	112.1	0.41	43	67	0.0020	0.0030	0.0257	0.0517
WV	114.3	0.42	43	68	0.0020	0.0030	0.0262	0.0527
WY	62.9	0.23	24	38	0.0011	0.0017	0.0144	0.0290
U.S. Total	5,978.0	21.99	2274	3579				

Table 2

European Union Country-by-country Analysis of the Impacts of a Complete Cessation of Carbon Dioxide Emissions¹⁵

Country	2005 Emissions (mmt CO ₂)	% Global Total	Time until Total Emissions Cessation Subsumed by Growth (days)		Temperature "Savings" (°C)		Sea Level "Savings" (cm)	
			Global Growth	China Growth	Year 2050	Year 2100	Year 2050	Year 2100
Austria	78	0.28	30	47	0.0013	0.0020	0.0173	0.0349
Belgium	136	0.48	52	81	0.0023	0.0035	0.0301	0.0606
Bulgaria	51	0.18	19	30	0.0009	0.0013	0.0112	0.0225
Cyprus	9	0.03	3	5	0.0002	0.0002	0.0020	0.0039
Czech Republic	113	0.40	43	68	0.0019	0.0029	0.0250	0.0503
Denmark	51	0.18	19	31	0.0009	0.0013	0.0113	0.0227
Estonia	19	0.07	7	11	0.0003	0.0005	0.0042	0.0084
Finland	52	0.19	20	31	0.0009	0.0013	0.0116	0.0233
France	415	1.47	158	249	0.0072	0.0107	0.0920	0.1853
Germany	844	2.99	321	505	0.0145	0.0217	0.1870	0.3767
Greece	103	0.37	39	62	0.0018	0.0027	0.0229	0.0460
Hungary	60	0.21	23	36	0.0010	0.0015	0.0133	0.0267
Ireland	44	0.16	17	26	0.0008	0.0011	0.0098	0.0197
Italy	467	1.66	178	279	0.0080	0.0120	0.1034	0.2082
Latvia	8	0.03	3	5	0.0001	0.0002	0.0019	0.0037
Lithuania	14	0.05	5	8	0.0002	0.0004	0.0031	0.0062
Luxembourg	13	0.04	5	8	0.0002	0.0003	0.0028	0.0056
Malta	3	0.01	1	2	0.0001	0.0001	0.0007	0.0013
Netherlands	270	0.96	103	161	0.0046	0.0069	0.0597	0.1203
Poland	285	1.01	108	170	0.0049	0.0073	0.0631	0.1270
Portugal	65	0.23	25	39	0.0011	0.0017	0.0144	0.0290
Romania	99	0.35	38	59	0.0017	0.0026	0.0220	0.0443
Slovakia	38	0.13	14	23	0.0007	0.0010	0.0084	0.0169

Slovenia	17	0.06	6	10	0.0003	0.0004	0.0037	0.0075
Spain	387	1.37	147	232	0.0067	0.0100	0.0858	0.1727
Sweden	59	0.21	22	35	0.0010	0.0015	0.0130	0.0262
United Kingdom	577	2.05	220	346	0.0099	0.0149	0.1279	0.2575
Total	4,276	15.17	1,627	2,560	0.0737	0.1101	0.9471	1.9077

Table 3

Japan, Australia, New Zealand, Canada: Analysis of the Impacts of a Complete Cessation of Carbon Dioxide Emissions

Country	2006 Emissions (mmt CO ₂)	% Global Total	Time until Total Emissions Cessation Subsumed by Growth (days)		Temperature "Savings" (°C)		Sea Level "Savings" (cm)	
			Global Growth	China Growth	Year 2050	Year 2100	Year 2050	Year 2100
Australia	417	1.43	159	250	0.0072	0.0108	0.0929	0.1872
Japan	1247	4.27	474	747	0.0216	0.0323	0.2778	0.5595
New Zealand	38	0.13	15	23	0.0007	0.0010	0.0085	0.0172
Canada	614	2.10	234	368	0.0101	0.0159	0.1369	0.2757

Appendix II

NO SMOKING HOT SPOT

by Dr. David Evans | July 18, 2008

I devoted six years to carbon accounting, building models for the Australian Greenhouse Office. I am the rocket scientist who wrote the carbon accounting model (FullCAM) that measures Australia's compliance with the Kyoto Protocol, in the land use change and forestry sector.

FullCAM models carbon flows in plants, mulch, debris, soils and agricultural products, using inputs such as climate data, plant physiology and satellite data. I've been following the global warming debate closely for years.

When I started that job in 1999 the evidence that carbon emissions caused global warming seemed pretty good: CO₂ is a greenhouse gas, the old ice core data, no other suspects.

The evidence was not conclusive, but why wait until we were certain when it appeared we needed to act quickly? Soon government and the scientific community were working together and lots of science research jobs were created. We scientists had political support, the ear of government, big budgets, and we felt fairly important and useful (well, I did anyway). It was great. We were working to save the planet.

But since 1999 new evidence has seriously weakened the case that carbon emissions are the main cause of global warming, and by 2007 the evidence was pretty conclusive that carbon played only a minor role and was not the main cause of the recent global warming. As Lord Keynes famously said, "When the facts change, I change my mind. What do you do, sir?"

There has not been a public debate about the causes of global warming and most of the public and our decision makers are not aware of the most basic salient facts:

1. The greenhouse signature is missing. We have been looking and measuring for years, and cannot find it.

Each possible cause of global warming has a different pattern of where in the planet the warming occurs first and the most. The signature of an increased greenhouse effect is a hot spot about 10km up in the atmosphere over the tropics. We have been measuring the atmosphere for decades using radiosondes: weather balloons with thermometers that radio back the temperature as the balloon ascends through the atmosphere. They show no hot spot. Whatsoever.

If there is no hot spot then an increased greenhouse effect is not the cause of global warming. So we know for sure that carbon emissions are not a significant cause of the global warming. If we had found the greenhouse signature then I would be an alarmist again.

When the signature was found to be missing in 2007 (after the latest IPCC report), alarmists objected that maybe the readings of the radiosonde thermometers might not be accurate and maybe the hot spot was there but had gone undetected. Yet hundreds of radiosondes have given the same answer, so statistically it is not possible that they missed the hot spot.

Recently the alarmists have suggested we ignore the radiosonde thermometers, but instead take the radiosonde wind measurements, apply a theory about wind shear, and run the results through their computers to estimate the temperatures. They then say that the results show that we cannot rule out the presence of a hot spot. If you believe that you'd believe anything.

2. There is no evidence to support the idea that carbon emissions cause significant global warming. None. There is plenty of evidence that global warming has occurred, and theory suggests that carbon emissions should raise temperatures (though by how much is hotly disputed) but there are no observations by anyone that implicate carbon emissions as a significant cause of the recent global warming.
3. The satellites that measure the world's temperature all say that the warming trend ended in 2001, and that the temperature has dropped about 0.6C in the past year (to the temperature of 1980). Land-based temperature readings are corrupted by the "urban heat island" effect: urban areas encroaching on thermometer stations warm the micro-climate around the thermometer, due to vegetation changes, concrete, cars, houses. Satellite data is the only temperature data we can trust, but it only goes back to 1979. NASA reports only land-based data, and reports a modest warming trend and recent cooling. The other three global temperature records use a mix of satellite and land measurements, or satellite only, and they all show no warming since 2001 and a recent cooling.
4. The new ice cores show that in the past six global warmings over the past half a million years, the temperature rises occurred on average 800 years before the accompanying rise in atmospheric carbon. Which says something important about which was cause and which was effect.

None of these points are controversial. The alarmist scientists agree with them, though they would dispute their relevance.

The last point was known and past dispute by 2003, yet Al Gore made his movie in 2005 and presented the ice cores as the sole reason for believing that carbon emissions cause global warming. In any other political context our cynical and experienced press corps would surely have called this dishonest and widely questioned the politician's assertion.

Until now the global warming debate has merely been an academic matter of little interest. Now that it matters, we should debate the causes of global warming.

So far that debate has just consisted of a simple sleight of hand: show evidence of global warming, and while the audience is stunned at the implications, simply assert that it is due to carbon emissions.

In the minds of the audience, the evidence that global warming has occurred becomes conflated with the alleged cause, and the audience hasn't noticed that the cause was merely asserted, not proved.

If there really was any evidence that carbon emissions caused global warming, don't you think we would have heard all about it ad nauseam by now?

The world has spent \$50 billion on global warming since 1990, and we have not found any actual evidence that carbon emissions cause global warming. Evidence consists of observations made by someone at some time that supports the idea that carbon emissions cause global warming. Computer models and theoretical calculations are not evidence, they are just theory.

What is going to happen over the next decade as global temperatures continue not to rise? The Labor Government is about to deliberately wreck the economy in order to reduce carbon emissions. If the reasons later turn out to be bogus, the electorate is not going to re-elect a Labor government for a long time. When it comes to light that the carbon scare was known to be bogus in 2008, the ALP is going to be regarded as criminally negligent or ideologically stupid for not having seen through it. And if the Liberals support the general thrust of their actions, they will be seen likewise.

The onus should be on those who want to change things to provide evidence for why the changes are necessary. The Australian public is eventually going to have to be told the evidence anyway, so it might as well be told before wrecking the economy.

Dr. David Evans was a consultant to the Australian Greenhouse Office from 1999 to 2005.

Article from: [The Australian](http://www.theaustralian.news.com.au/story/0,25197,24036736-7583,00.html)

<http://www.theaustralian.news.com.au/story/0,25197,24036736-7583,00.html>.

References

¹ *History of Energy in the United States:1635-2000*,
<http://www.eia.doe.gov/emeu/aer/eh/frame.html>.

² BLS Inflation Calculator <http://data.bls.gov/cgi-bin/cpicalc.pl>.

³ Treasury Department, <http://www.treasurydirect.gov/NP/BPDLLogin?application=np>.

⁴ Richard W. Fisher, Storms on the Horizon, Remarks before the Commonwealth Club of California, San Francisco, California, May 28, 2008.
<http://www.dallasfed.org/news/speeches/fisher/2008/fs080528.cfm>.

- ⁵ Federal Reserve Bank of St Louis,
<http://research.stlouisfed.org/fred2/series/AMBNS?cid=124>.
- ⁶ <http://www.bis.org/statistics/otcder/dt1920a.pdf>.
- ⁷ http://www.siliconvalleywatcher.com/mt/archives/2008/10/the_size_of_der.php.
- ⁸ *Why Wall St Needed Credit Default Swaps*, <http://seekingalpha.com/article/73060-why-wall-st-needed-credit-default-swaps>.
- ⁹ Carbon Market worth up to \$118 billion in 2008-report, Reuters UK, Jan 8, 2009.
<http://uk.reuters.com/article/breakingFundsNews/idUKL828985820090108>.
- ¹⁰ Carbon Trading: The limits of free-market logic, Kevin Smith.
http://www.tni.org/detail_page.phtml?act_id=17350.
- ¹¹ Outsize profits and Questions, In effort to cut warming gases. Dec 21, 2006 The New York Times.
<http://query.nytimes.com/gst/fullpage.html?res=9D04E3D81031F932A15751C1A9609C8B63&sec=&spon=&pagewanted=1>.
- ¹² *No Smoking Hot Spot*, The Australian,
<http://www.theaustralian.news.com.au/story/0,25197,24036736-7583,00.html>.
- ¹³ The Good Gifts Catalogue.
<http://www.goodgiftshop.org/productinfo.aspx?&tier1=Gifts&tier2=Giving+the+gift+of+sight&catref=7010>.
- ¹⁴ Climate Action Plans Fail to Deliver p 5.
http://scienceandpublicpolicy.org/originals/climate_action_plans_fail_to_deliver.html.
- ¹⁵ Climate Action Plans Fail to Deliver, p 10.
http://scienceandpublicpolicy.org/originals/climate_action_plans_fail_to_deliver.html.

II. Science

ON THE CENTRAL QUESTION OF CLIMATE SENSITIVITY

by Lord Monckton of Brenchley | May 17, 2009

The Honorable Joe Barton and the Honorable Fred Upton
17 May 2009

Gentlemen,

Following my recent testimony before the Energy and Commerce Committee of the House, you kindly directed a question to me via the Committee Clerks –

“Is there any dispute that, as you say, “How much warming will a given proportionate increase of CO2 concentration cause?” is the central question of the climate debate?”

a) **“If so, what is it?”**

b) **“If not, why hasn’t the scientific community participating in the IPCC caught the matter?”**

I apologise that my reply is a little late. I have taken some time consulting scientific experts. No discourtesy either to you personally or to the Committee was intended.

The “climate sensitivity” question, as it is called, is indeed the central question, on which all else depends.

The answer to your principal question is that there is no dispute at all about whether the question “How much warming will a given proportionate increase of CO2 concentration cause?” is the central question of the climate debate. The “climate sensitivity” question, as it is called, is indeed the central question, on which all else depends. If climate sensitivity is high, as the IPCC maintains it is, then much “global warming” can be expected, whereupon the questions that fall to be answered are how much damage (if any) the warming predicted by the IPCC may cause, and whether or to what extent it lies within our power to mitigate or adapt to the predicted warming and any consequent damage, and whether the costs of mitigation might outweigh the costs of the damage the warming may cause, and whether or to what extent it would be cheaper to adapt to any “global warming” that might occur, as *and if* necessary.

The IPCC’s answer to the climate sensitivity question keeps changing, and in a downward direction.

The IPCC’s answer to the climate sensitivity question keeps changing, and in a

downward direction. Its 1995 report provided a central estimate that a doubling of CO₂ concentration – i.e. a proportionate increase of 2.0, which is taken as the standard metric for evaluating climate sensitivity – would cause **3.8 K** (6.8 F°) of atmospheric warming. The IPCC's 2001 assessment report revised that estimate downward to **3.5 K** (6.3 F°). The IPCC's 2007 report cut the central estimate again, this time to **3.26 K** (5.9 F°). The additional precision of the second decimal digit should not be taken as a convergence of the IPCC's estimates upon an increasingly precise and agreed value for climate sensitivity: instead, it is an artefact of the IPCC's methodology, by which equilibrium climate sensitivity, in Kelvin degrees, is (4.7 ± 1) times the natural logarithm of the proportionate increase in atmospheric CO₂ concentration.

James Hansen, the director of the NASA Goddard Institute for Space Studies, has recently suggested that the value of the “final-climate-sensitivity parameter” λ (by

Making appropriate adjustments for these apparent exaggerations by the IPCC, I calculate that true climate sensitivity may well be as little as 1.1 K at CO₂ doubling.

which a given radiative forcing ΔF is multiplied to yield the consequent equilibrium increase in global mean surface temperature $\Delta T_s = \lambda \Delta F$) is $\lambda \approx 0.75$, rather than the substantially higher central estimate $\lambda \approx 0.97$ implicit in the IPCC's 2007 climate assessment. Dr. Hansen's revised value for λ would require a further reduction in the central estimate of climate sensitivity to **2.6 K** (4.6 F°). The only stated value for λ in IPCC (2001) was \approx

0.5, implying a further reduction in the climate sensitivity estimate to **1.73 K** (3.1 F°) of “global warming” at equilibrium in response to a doubling of atmospheric CO₂ concentration.

Svante Arrhenius, the Swedish theoretical chemist and Nobel laureate, provided the first respectable quantification of climate sensitivity to a CO₂ doubling in a paper of 1906, published in Vol. 1 No. 2 of the *Journal of the Royal Nobel Institute*, of which the relevant conclusion is reproduced in facsimile and in translation below –

In ähnlicher Weise berechne ich, dass eine Verminderung des Kohlensäuregehalts zur Hälfte oder eine Zunahme desselben auf den doppelten Betrag Temperaturänderungen von $-1,5^\circ \text{C}$. bzw. $+1,6^\circ \text{C}$. entsprechen würde.

“Likewise, I calculate that a halving or doubling of the CO₂ concentration would be equivalent to changes of temperature of -1.5 K or **+1.6 K** respectively.”

Arrhenius, like many more recent commentators on the IPCC's calculations, does not accord the same very high values to temperature feedbacks as does the IPCC itself. Also, the IPCC has chosen the highest value for the Planck parameter that occurs in the mainstream literature, and there are good theoretical reasons for the conclusion that its chosen value is excessive.

Making appropriate adjustments for these apparent exaggerations by the IPCC, I calculate that true climate sensitivity may well be as little as **1.1 K** at CO₂ doubling.

Furthermore, one must make allowance for the fact that atmospheric CO₂ concentration is rising at only half the rate predicted by the IPCC, even though CO₂ emissions are rising at the higher end of the IPCC's expectations. This is because, as the IPCC's 2001 report admits, the IPCC is unable to add up the Earth/troposphere "carbon budget" to within a factor of two of the right answer. The hydrosphere and biosphere – perhaps through increased rates of photosynthesis – are taking CO₂ out of the atmosphere and "fixing" it faster than the IPCC had expected. Figure 1 illustrates the discrepancy –

CO₂ concentration is rising, but well below IPCC predictions

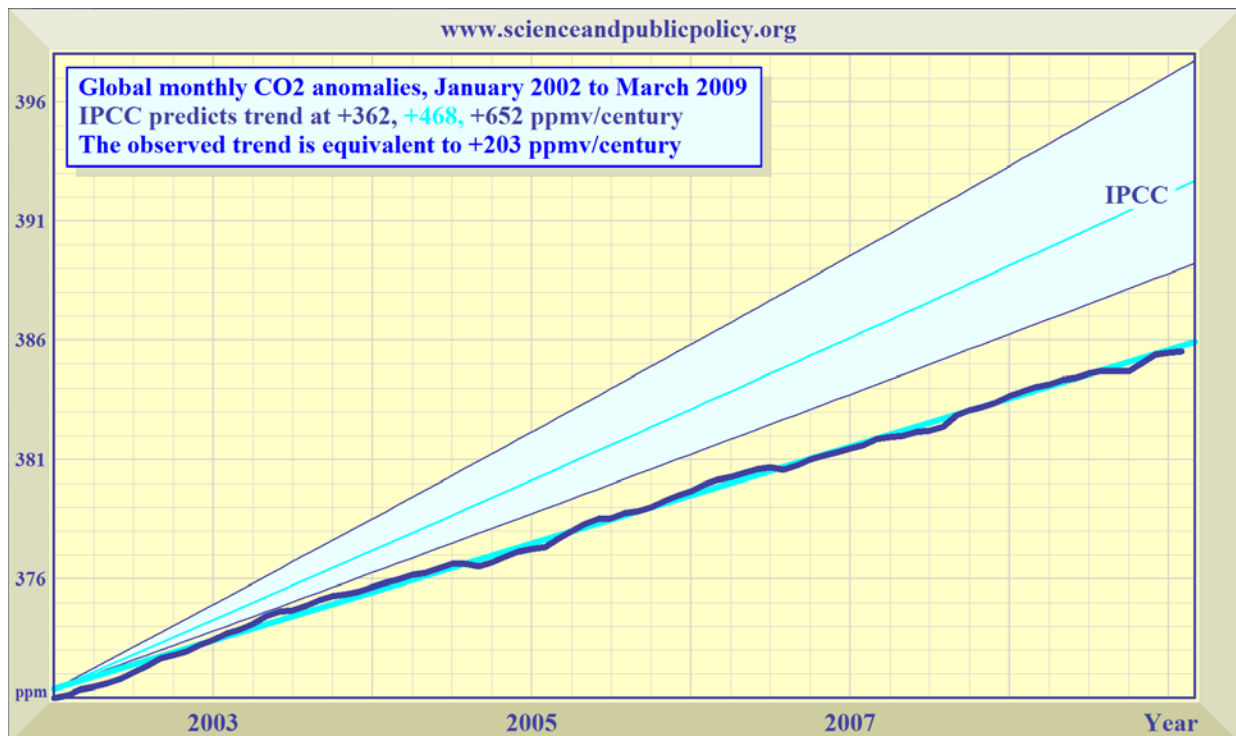


Figure 1: Deseasonalized NOAA observations are the thick, **dark-blue** line overlaid on the least-squares linear-regression trend. CO₂ is rising linearly, well below the IPCC's projected range (**pale blue region**). There is no exponential growth.

This discrepancy between prediction and observed reality is in fact larger than it appears, because the IPCC predicts that CO₂ concentration will increase exponentially, while in fact it is increasing only linearly, as Figure 2 shows –

IPCC predicts rapid, exponential CO₂ growth that is not occurring

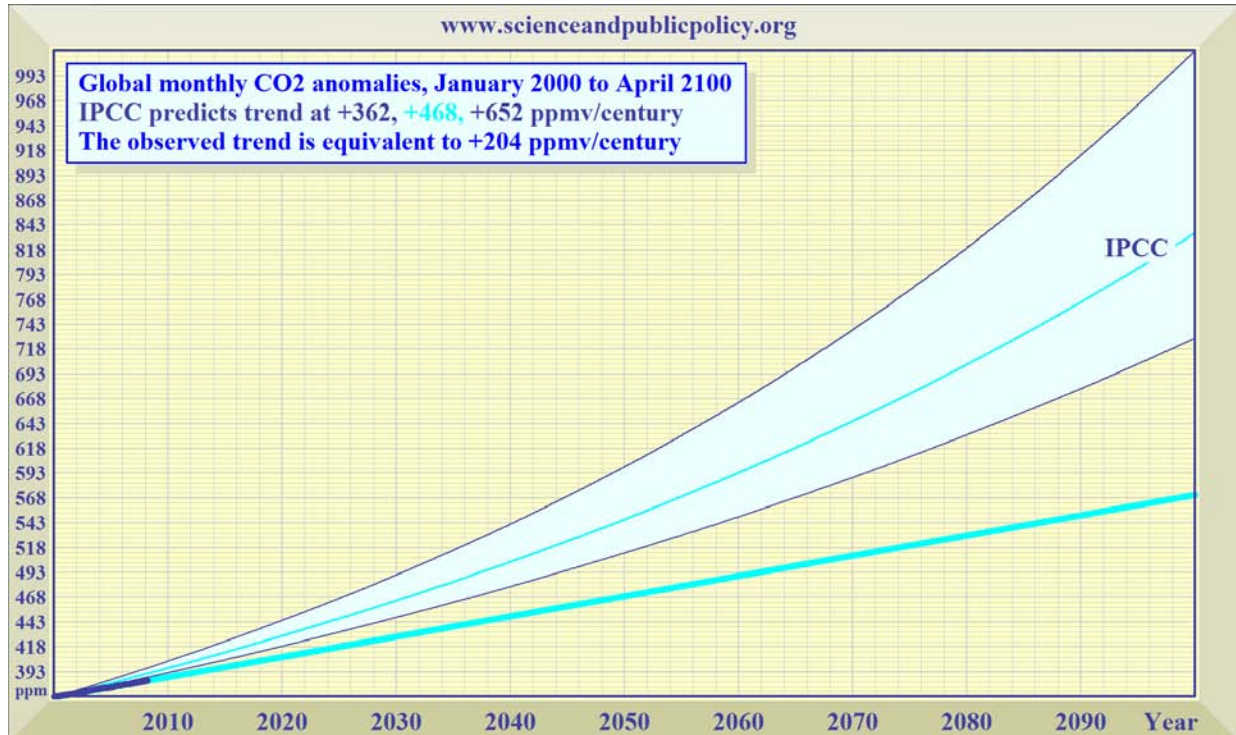


Figure 2: Observed CO₂ growth is linear, and is also well below the exponential-growth curves (bounding the pale blue region) predicted by the IPCC in its 2007 report.

On its own, the failure of CO₂ concentration to increase at even half the predicted rate requires all of the IPCC’s projections for anthropogenic “global warming” over the 21st century to be halved.

It will be seen that the anthropogenic contribution to “global warming” over the whole of the 20th century could be as little as 0.6 K (1.1 F°). If so, no action either in mitigation or in adaptation would be needed.

The various changes in climate sensitivity estimates that I have discussed are summarized in Table 1, where successive changes in the parameters whose product is final temperature change are shown in green. The rightmost column shows predicted

temperature change to 2100; the penultimate column shows predicted temperature change in response to a doubling of CO₂ concentration –

Table 1: Changing climate-sensitivity estimates

2009-2100	C ppmv (2100)	n $\Delta F/\ln 2$ Forcing	κ No fdbks	b Feed- backs	g $0.92n\kappa$ $\cdot(1-\kappa b)^{-1}$	$\Delta T_{S, 2X}$ $g \ln 2$ Clim.sensi	$\Delta T_{S, 2100}$ $g \ln(C/385)$ cf. 2009
Hansen 1984-8	834	6.93	.290	2.35	6.1	4.20 °C	+4.7 °C
IPCC 1990	834	6.40	.300	2.27	5.5	3.80 °C	+4.3 °C
IPCC 2001	834	5.35	.305	2.30	5.0	3.50 °C	+3.9 °C
IPCC 2007	834	5.35	.313	2.16	4.7	3.26 °C	+3.6 °C
Hansen 0.75	834	5.35	.290	2.12	3.7	2.56 °C	+2.9 °C
ΔT_S since '80							+1.4 °C
+ real CO2	570	5.35	.290	2.12	3.7	2.56 °C	+1.4 °C
IPCC '01: .24	570	5.35	.240	2.08	2.4	1.73 °C	+0.9 °C
Arrhenius '06					2.2	1.55 °C	+0.9 °C
Correct b	570	5.35	.240	1.17	1.6	1.14 °C	+0.6 °C

It will be seen that the anthropogenic contribution to “global warming” over the whole of the 20th century could be as little as **0.6 K** (1.1 F°). If so, no action either in mitigation or in adaptation would be needed.

As I mentioned in my previous letter to the Committee, there is considerable empirical verification of this theoretically-evaluated result, which has considerable backing in the literature. For instance, direct satellite measurements show that outgoing long-wave radiation has not diminished anything like as fast as the IPCC’s climate-sensitivity estimates would require: in fact, as shown in numerous papers, it has diminished at one-seventh to one-tenth of the rate required by the IPCC’s climate-sensitivity predictions, implying that climate sensitivity is one-seventh to one-tenth of the IPCC’s value.

Further empirical verification is to be found in the now well-established failure of the world’s oceans to warm as predicted by the models on which the IPCC relies. Since 2003, some 3300 automated bathythermograph buoys have been deployed throughout the world’s oceans in the ARGO program. These buoys have

These buoys have shown no oceanic warming in the five years since they were deployed, contrary to model predictions.

shown no oceanic warming in the five years since they were deployed, contrary to model predictions that pronounced warming would occur. This result is highly significant, because it is the oceans, far more than the atmosphere, that are the real bell-wether of climatic change. The oceans, some 1100 times denser than the atmosphere, would be expected to take up at least 80% of the excess heat generated by anthropogenic greenhouse-gas emissions: yet, despite continuing rapid increases in emissions, the oceans are not warming at all, and may even be cooling a little. As with the long-wave radiation discrepancy, the discrepancy between prediction and observed reality in the failure of the oceans to warm would imply a substantial reduction of some sixfold to eightfold in the climate sensitivity estimates of the IPCC. This observed result, like the result for outgoing long-wave radiation, is in line with our calculations.

A fourth empirical verification appears in the self-evident failure of the global mean surface temperature record to show any anthropogenic signal whatsoever at any point.

As mentioned in my earlier letter to the Committee, yet a third empirical verification is available in the absence of the model-predicted threefold differential between the warming rate of the tropical upper troposphere and that of the tropical surface. According to Professor Richard Lindzen, the repeatedly-observed absence of the higher warming rate in the upper troposphere requires that the IPCC's

climate sensitivity calculations be divided by at least 3 – and that is before taking account the IPCC's exaggeration of the Planck parameter and of many temperature feedbacks.

A fourth empirical verification appears in the self-evident failure of the global mean surface temperature record to show any anthropogenic signal whatsoever at any point. The most rapid rate of warming in the 20th century occurred between 1975 and 1978, during which time it is at least theoretically possible that humankind might have had some influence on temperature. However, as I have recently confirmed by arranging for a Parliamentary Question to be put down in the House of Lords, two previous periods – 1860-1880 and 1910-1940 – exhibited precisely the same warming rate, even though the IPCC's own methodology establishes that during those two earlier periods the influence of humankind on temperature was comparatively negligible –

No anthropogenic signal in the global temperature record

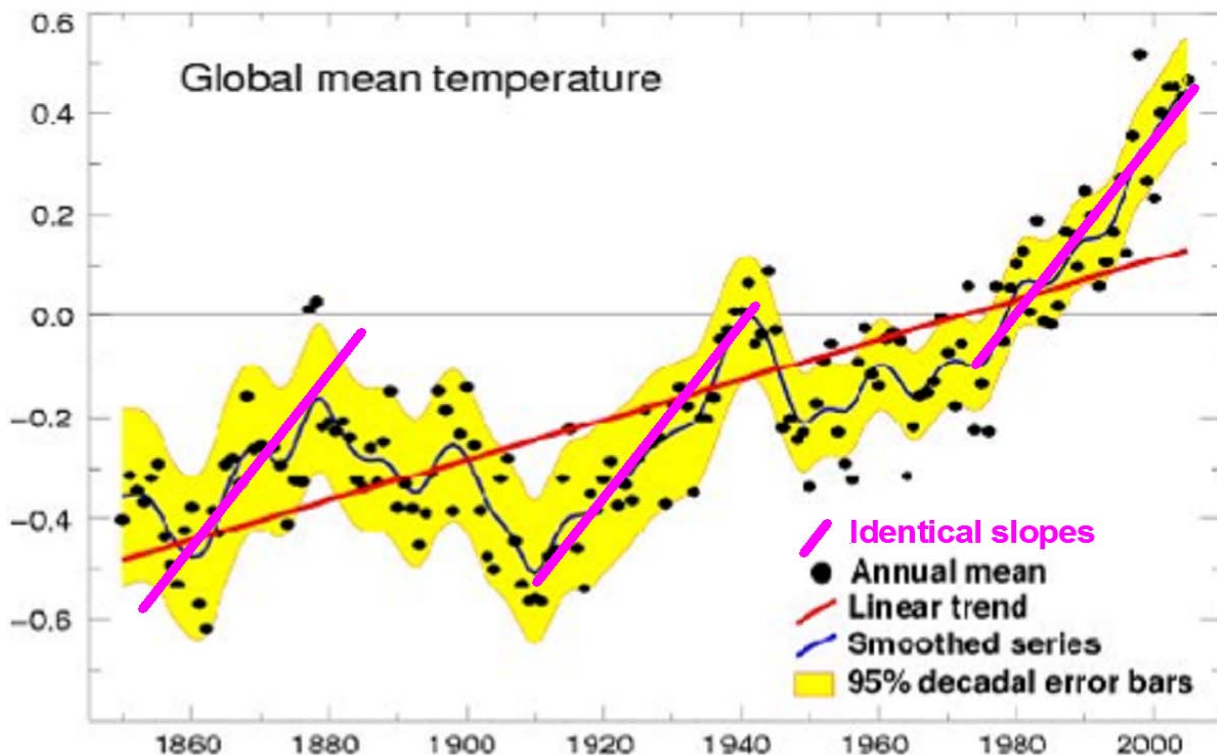


Figure 3: The three magenta lines on the global-temperature graph are strictly parallel, showing that there has been no discernible anthropogenic influence on surface temperature, notwithstanding continuing increases in atmospheric CO₂ concentration.

In addition, as Figure 4 shows, since the beginning of the new millennium on 1 January 2001 there has been an eight-and-a-half-year downtrend in global mean surface temperatures, at an equivalent centennial rate rather greater than the uptrend over the 20th century:

Since the beginning of the new millennium on 1 January 2001 there has been an eight-and-a-half-year downtrend in global mean surface temperatures, at an equivalent centennial rate rather greater than the uptrend over the 20th century.

A long, unreported downtrend: 8+ years' global cooling at
1 K /century

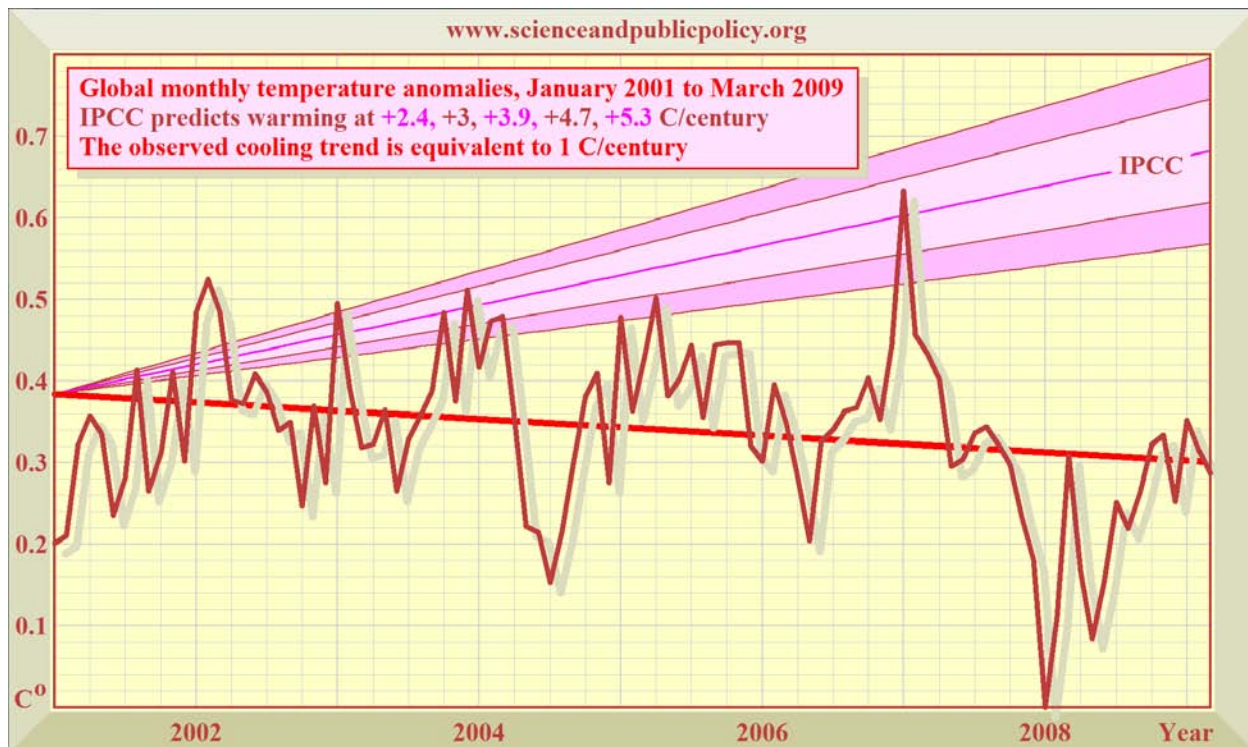


Figure 4: For eight and a half years, global temperatures have exhibited a pronounced downtrend. The IPCC's predicted equilibrium warming path (pink region) bears no relation to the global cooling that has been observed in the 21st century to date. **Source:** SPPI global temperature index, compiled from HadCRU, NCDC, RSS, and UAH temperature datasets.

There are now sound theoretical reasons, repeatedly confirmed by empirical observations, for suspecting that the IPCC has exaggerated climate sensitivity by up to tenfold, and that it has also exaggerated the rate of accumulation of CO₂ in the atmosphere by twofold.

To summarize, there are now sound theoretical reasons, repeatedly confirmed by empirical observations, for suspecting that the IPCC has exaggerated climate sensitivity by up to tenfold, and that it has also exaggerated the rate of accumulation of CO₂ in the atmosphere by twofold.

The answer to your subsidiary question b), “Why hasn’t the scientific community participating in the IPCC caught the matter?”, is simple. Nowhere does the IPCC clearly explain the methodology that it uses in the calculation of climate

sensitivity. It leaves scientists to take its climate-sensitivity values upon trust – a trust that, as we have demonstrated, is very likely to be misplaced.

Precisely because the IPCC's methodology is unclear, most scientists do not have the means or opportunity to pick through its lengthy documents in detail and to follow the trail of references in the peer-reviewed literature in order to evaluate for themselves the reliability or unreliability of the IPCC's estimates.

There is plenty of evidence that the majority of the scientists participating in the IPCC's process were not involved in the climate sensitivity calculations: they took those calculations as Gospel and drew conclusions from them – conclusions that in many instances would have been excessive even if the IPCC's climate-sensitivity estimates had not been exaggerated.

There is plenty of evidence that the majority of the scientists participating in the IPCC's process were not involved in the climate sensitivity calculations: they took those calculations as Gospel and drew conclusions from them – conclusions that in many instances would have been excessive even if the IPCC's climate-sensitivity estimates had not been exaggerated.

The IPCC does not anywhere explain clearly that it calculates greenhouse-enrichment-induced temperature change over time as the product of four parameters, the –

- **Radiative forcing**, which is the extra energy at the top of the atmosphere caused by atmospheric enrichment with a greenhouse gas such as CO₂;
- **Planck parameter**, which converts the tropopausal radiative forcing to surface temperature change in the absence of temperature feedbacks;
- **Temperature-feedback multiplier**, which amplifies the initial warming in response to net-positive temperature feedbacks; and
- **Natural logarithm of the proportionate increase in CO₂ concentration.**

The relation is logarithmic because each additional CO₂ molecule has less effect on temperature than its predecessors.

It is at once apparent that even a very small exaggeration in the value of each of the four key parameters will cause a very large exaggeration when the four parameters are multiplied together to give the UN's projection of anthropogenic

temperature change over time. For instance, even if each of the four parameters is exaggerated, on average, by as little as one-third, once the four parameters are multiplied together the projected temperature change will appear to be $(4/3)^4 = 3.16$, or more than thrice what it should be.

It is at once apparent that even a very small exaggeration in the value of each of the four key parameters will cause a very large exaggeration when the four parameters are multiplied together to give the UN's projection of anthropogenic

However, as I have indicated, the UN has, on average, approximately *doubled* the value of each of the four parameters. That is, when they are multiplied together, the

UN's projection of temperature increase to 2100 becomes approximately $2^4 = 16$ times too great. It is this central exaggeration on which all of the UN's overstated conclusions about the impacts of anthropogenic "global warming" absolutely depend.

Yet the vast majority of the scientists who wrote and reviewed the UN's climate reports are unaware of these exaggerations, and most are unaware even that it is the multiplication together of four separate exaggerations that causes the very large overestimates of anthropogenic temperature change over the present century which repeated satellite measurements of changes in outgoing long-wave radiation and bathythermograph measurements of changes in ocean temperature have demonstrated, and without which the UN's entire case for alarm about our effect on the climate falls away.

Most scientists are unaware of the magnitude of the UN's exaggeration, because the UN's treatment of the central question of climate sensitivity is obscurantist in the extreme. Consideration of the four key parameters is scattered untidily through several separate chapters of each report: yet the chapters are written and reviewed by different groups of scientists. At no point are the four parameters and the relationships between them drawn explicitly and clearly together.

Most scientists are unaware of the magnitude of the UN's exaggeration, because the UN's treatment of the central question of climate sensitivity is obscurantist in the extreme.

Some of the crucial parameters are not even explicitly quantified. The question of climate sensitivity ought to be the first question dealt with in each major, quinquennial UN climate assessment: however, the topic is neither explicitly nor completely dealt with either in the 2001 or in the 2007 report.

Often, the values selected by the UN exceed those in the very small number of papers that it cites as justification for the particular values it has chosen. Many papers are cited, but few – if any – provide real justification for the UN’s chosen values.

Correcting for the UN’s exaggerations of each of the four key parameters reduces climate sensitivity from 3.26 C to a small fraction of this value at CO2 doubling, and to a still smaller fraction by 2100.

These are some of the reasons why few scientists have noticed the large – and perhaps accidental – exaggeration that has demonstrably resulted from the UN’s methodology.

As we have already seen, the UN’s projection of the rate at which CO₂ accumulates in the atmosphere leads – on its own – to an unwarrantable near-

doubling of its estimate of temperature increase over the present century.

The three other parameters I have mentioned – radiative forcing, the Planck parameter and the feedback factor, which together constitute climate sensitivity – are similarly exaggerated by approximately a factor of two in each instance, as I outlined in my previous letter to the Committee.

Correcting for the UN’s exaggerations of each of the four key parameters reduces climate sensitivity from 3.26 C to a small fraction of this value at CO₂ doubling, and to a still smaller fraction by 2100.

Whether or not “global warming” will eventually resume, and whether or not it will eventually reach the IPCC’s predicted rate (which is at least double any rate that has been observed or inferred since the beginning of the Industrial Revolution, though it would be well below of the rate measured in Central England for the period 1695-1745, before the Industrial Revolution even began, and before humankind could have had even the smallest influence over global temperature), there is one further question which the Committee should of course consider most carefully when marking up the Waxman/Markey Bill.

The cost of each 1 K of “global warming” prevented by the Waxman/Markey Bill, even if it were fully implemented, would thus be \$60-\$600 trillion. It is highly questionable whether the economic costs of simply allowing “global warming” to take its course, even if that “global warming” were to occur on the exaggerated scale imagined by the IPCC, could possibly exceed the monstrous and crippling cost of fully implementing the Waxman/Markey Bill. This cost would fall disproportionately upon the poorest.

That question is the cost-effectiveness question. By how much, and at what cost, must anthropogenic CO₂ emissions be reduced in order to prevent each 1K (1.8 F°) of imagined future anthropogenic “global warming”?

The answer, as the attached draft paper for *World Economics* explains in detail, is that CO₂ emissions must be cut by 2 teratonnes (i.e. 2 million million metric

The Bill, even in its much-watered-down form, will still be costly, requiring the creation and maintenance of a series of monstrous, supererogatory and purposeless bureaucracies, which will achieve precisely no reduction in global mean surface temperature but will cost a great deal to run.

tons) to prevent just 1K of warming, even if the IPCC’s climate-sensitivity estimates are correct. If, however, they are exaggerated by approximately an order of magnitude, as the empirical evidence that I have mentioned powerfully suggests, then it would be necessary to reduce CO₂ emissions by a staggering 20 teratonnes in order to prevent 1K of anthropogenic warming.

The cost of each 1K of “global warming” prevented by the Waxman/Markey Bill, even if it were fully implemented, would thus be **\$60-\$600 trillion**. It is highly

questionable whether the economic costs of simply allowing “global warming” to take its course, even if that “global warming” were to occur on the exaggerated scale imagined by the IPCC, could possibly exceed the monstrous and crippling cost of fully implementing the Waxman/Markey Bill. This cost would fall disproportionately upon the poorest.

I hope that it is clearly understood that I am not making any partisan point here. It is abundantly clear from the attached draft paper that, on any view, the Waxman/Markey Bill is economically and scientifically senseless. Exactly as I had warned the Committee during my testimony, if the Bill were to make any significant impact on global temperature it would be outlandishly and disproportionately expensive, and if the Bill were made inexpensive it could not make any significant impact on global temperature.

The latest draft of the Bill shows that the Majority on the Committee, confronted (by me among others) with the catastrophic consequences for working and low-income

The central difficulty is illustrated by perhaps the most startling statistic in the paper: that even if we were to shut down the entire global economy and fling humankind back into the Stone Age, without even the right to light fires in our caves, “global warming” prevented would amount to 0.0035-0.035 K/year (0.006-o.06 F/year).

families, has decided to opt for a series of pork-barrel opt-outs in an attempt to make the Bill comparatively inexpensive. However, the Bill, even in its much-watered-down form, will still be costly, requiring the creation and maintenance of a series of monstrous, supererogatory and purposeless bureaucracies, which will achieve precisely no reduction in global mean surface temperature but will cost a great deal to run.

The calculations in the attached paper are robust. They have already been verified by experts, and they demonstrate the extreme futility of any measure such as the Waxman-Markey Bill. I say “any measure” because my strictures are not directed

From the climatic point of view, the Bill in any form is simply irrelevant.

only at the Waxman-Markey Bill. Any Bill would face the same impossible hurdles as Waxman-Markey. The central difficulty is illustrated by perhaps the most startling statistic in the paper: that even if we were to shut down the entire global economy and fling humankind back into the Stone Age, without even the right to light fires in our caves, “global warming” prevented would amount to **0.0035-0.035 K/year** (0.006-0.06 F/year).

If even so complete a shutdown would make no discernible difference to global temperature, then *a fortiori* the much-diluted measures in the Waxman/Markey Bill, however piously intended, will have no effect whatsoever. From the climatic point of view, the Bill in any form is simply irrelevant, just as any such Bill would be irrelevant, even if it had not been serially attenuated to meet the clamour of various vested-interest groups.

For these reasons, I recommend that, as a matter of urgency, the Committee should now establish a panel of scientists and specialists representing all opinions in the climate debate, so that that panel can examine and report to the Committee upon the objections that I have raised in this and my previous letter to the actions which the Majority now proposes to take.

It has been all too painfully evident, in the Committee debates that I have attended, that the Majority on the Committee have perhaps too little interest in the true science of climate, and are too ready to believe those who are profiting mightily by

It has been all too painfully evident, in the Committee debates that I have attended, that the Majority on the Committee have perhaps too little interest in the true science of climate, and are too ready to believe those who are profiting mightily by unreasonably amplifying the supposed threat posed by “global warming”, while overlooking the very large cost and certain ineffectiveness of counter-measures in mitigation.

unreasonably amplifying the supposed threat posed by “global warming”, while overlooking the very large cost and certain ineffectiveness of counter-measures in mitigation.

Let me refer to just one incident. I was asked by Acting Chairman Inslee to give an opinion on ocean acidification, which he and several others among the Majority said they thought was a serious and likely consequence of anthropogenic greenhouse-gas enrichment. I pointed out to the Committee that no global

One cannot at the same time argue that “global warming” will make the oceans warmer and that it will increase their acidity (or, rather, reduce their pronounced alkalinity).

acidification of the oceans has yet been measured, and that corals and other fragile sea-creatures that would certainly disintegrate were pH to fall below 7 had survived atmospheric concentrations of CO₂ that were up to 20 times today’s levels.

But the central objection to the “ocean-acidification” scare is this. By an elementary physical law of gases – Henry’s Law – if the oceans become warmer as a result of the

“global warming” imagined by the IPCC then they *outgas* CO₂, *reducing* the oceanic concentration of CO₂ and consequently *increasing* the alkalinity of the oceans (albeit by a minuscule fraction).

The IPCC’s own documents make it explicit that the official theory predicts this outgassing, which is described as the “CO₂ feedback”. One cannot at the same time argue that “global warming” will make the oceans warmer and that it will increase their acidity (or, rather, reduce their pronounced alkalinity). If many members of the Majority are ill-instructed on fundamental points of this kind, they may find themselves taking decisions that will have catastrophic consequences not only for the families with the lowest incomes but for the US economy as a whole.

I shall be happy to serve on the expert panel that I have recommended, and to bring in experts in relevant fields who will represent the viewpoint which – on the evidence now before me – is very much closer to the truth than that which is represented in the official documents of the IPCC and of the numerous US Government agencies – such as the NRC and the EPA – that

Long before the Bill really starts to bite, it will have become evident to all but a handful of irredentist zealots that the IPCC has indeed prodigiously exaggerated both the effect of CO₂ on global temperature and the rate at which CO₂ is accumulating in the atmosphere; that there was not, is not, and will not be any “climate crisis”.

are profiting financially and politically by reciting its findings as though they were their own, and that are too readily believed by the Majority, for whatever reason.

I conclude that it would be most unwise – and would achieve no useful climatic objective – to proceed any further with the Waxman/Markey Bill. Long before the Bill really starts to bite, it will have become evident to all but a handful of

Even if per impossibile the models could ever become reliable, the empirical evidence of outgoing long-wave radiation and of ocean temperature trends confirms theoretical evaluations demonstrating that it is not at all likely that the world will warm as much as the IPCC imagines.

irredentist zealots that the IPCC has indeed prodigiously exaggerated both the effect of CO₂ on global temperature and the rate at which CO₂ is accumulating in the atmosphere; that there was not, is not, and will not be any “climate crisis”; and that, even if there were, it would be simpler and cheaper – by orders of magnitude – to have the courage either to do nothing or to adapt as *and if* necessary than to attempt to mitigate the anthropogenic “global warming” that is imagined by the IPCC but that is not occurring and will not occur.

Even if global mean surface temperature had risen above natural variability, the recent solar Grand Maximum – or merely the natural, internal variability of the climate – may have been chiefly responsible.

Even if the sun were not chiefly to blame for the past half-century’s warming, the IPCC has not demonstrated that, since CO₂ occupies only one-ten-thousandth part more of the atmosphere that it did in 1750, it has contributed more than a small fraction of the warming.

Even if carbon dioxide were chiefly responsible for the warming that ceased in 1998 and may not resume until 2015, the distinctive, projected fingerprint of anthropogenic “greenhouse-gas” warming is entirely absent from the observed record.

Even if the fingerprint were present, computer models are long proven to be inherently incapable of providing projections of the future state of the climate that are sound enough for policymaking, because the initial state of the millions of variables that define the climate cannot be measured with sufficient precision reliably to predict future phase-transitions in the chaotic object that is the climate.

Even if *per impossibile* the models could ever become reliable, the empirical evidence of outgoing long-wave radiation and of ocean temperature trends

confirms theoretical evaluations demonstrating that it is not at all likely that the world will warm as much as the IPCC imagines.

Even if the world were to warm that much, the overwhelming majority of the scientific, peer-reviewed literature does not predict that catastrophe would ensue.

Even if catastrophe might ensue, even the most drastic proposals to mitigate future climate change by reducing emissions of carbon dioxide would make very little difference to the climate, and would do so at a flagrantly disproportionate cost that, on any scenario, would comfortably exceed the cost of merely allowing events to unfold.

Even if mitigation were likely to be effective, it would do more harm than good.

Even if mitigation were likely to be effective, it would do more harm than good: already millions face starvation as the dash for biofuels has taken one-third of US agricultural land out of essential food production in just two years: a warning that taking precautions, “just in case”, can do untold harm unless there is a sound, scientific basis for them.

Finally, even if mitigation might do more good than harm, adaptation as (*and if*) necessary would be far more cost-effective than mitigation, and less likely to be harmful.

Yours truly,

VISCOUNT MONCKTON OF BRENCHLEY

SPPI MONTHLY CO₂ REPORT :: APRIL 2009

ACCURATE, AUTHORITATIVE ANALYSIS FOR TODAY'S POLICYMAKERS

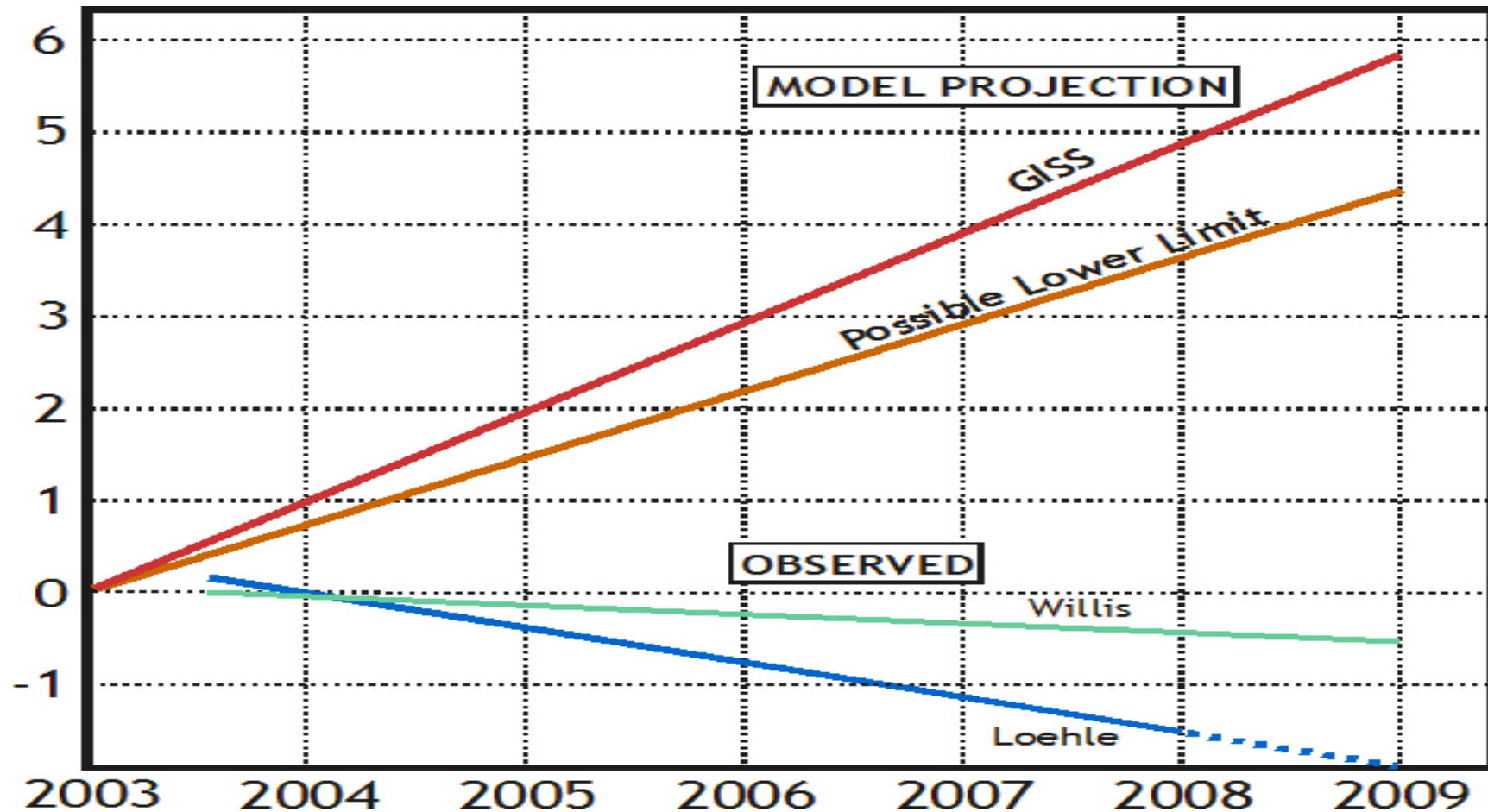
BY CHRISTOPHER MONCKTON, EDITOR

5 years' ocean cooling disproves models

SPPI's authoritative **MONTHLY CO₂ REPORT** for April 2009 reveals that **unpredicted ocean cooling** over the past five years disproves the theory that manmade "global warming" has a significant effect on the Earth's temperature.

- ✦ **None of the IPCC's computer models had predicted ocean cooling.** All had predicted ocean warming. They were wrong.
- ✦ **Rapid surface atmospheric cooling**, especially in the Northern Hemisphere, has now continued for seven and a half years.
- ✦ The **IPCC assumes CO₂ concentration will reach 836 [730, 1020] ppmv by 2100.** However, for seven years, CO₂ concentration has headed straight for only 575 ppmv by 2100. This alone **halves all of the IPCC's temperature projections.**
- ✦ Since 1980 **temperature has risen at only 2.5 °F (1.5 °C) per century**, not the 7 F° (3.9 C°) the IPCC imagines.
- ✦ For 600 million years there has been **no correlation between CO₂ concentration and the Earth's temperature.**
- ✦ **Sea level rose just 8 inches in the 20th century** and has been rising at just 1 ft/century since 1993. Though James Hansen of NASA says sea level will rise 246 feet, **sea level has scarcely risen since the beginning of 2006.**
- ✦ Sea ice extent in the Arctic is above the 30-year average, and has set a nine-year record high. In the Antarctic, sea ice extent reached a record high in 2007, and is now the third-highest in 30 years. **Global sea ice extent shows little trend for 30 years.**
- ✦ The Accumulated Cyclone Energy Index is a 2-year running monthly sum of activity in all hurricanes, typhoons and tropical cyclones. It shows that **there is now less severe tropical-storm activity than at any time in 30 years.**
- ✦ Solar activity is at a 100-year record low. **We may be facing a 70-year Maunder Minimum – extreme cooling.**
- ✦ **Science Focus** this month studies **"data revisionism" – how scientific results are bent to promote false alarmism.**
- ✦ **Finally**, check out our monthly selection of scientific papers, and meet the **Top Ten "Global Warming" skeptics.**

Five years' global ocean cooling: reality yet again disobeys models



Projected ocean warming vs. observed ocean cooling ($\times 10^{22}$ Joules: left scale): During the 5+ years since the deployment of 3300 automated bathythermograph buoys throughout the world's oceans, the oceans have not warmed as predicted by NASA/GISS: they have cooled, as shown in papers by Willis, and also by Loehle. In short, the models overestimate the anthropogenic effect on ocean heat sixfold to eightfold, in line with similar model-driven exaggerations of the diminution in outgoing long-wave radiation owing to additional atmospheric carbon dioxide, and in line with calculations (e.g. by Monckton, 2008) of the IPCC's overestimate of climate sensitivity. The ocean cooling, when steady warming would be expected, proves the "high-climate-sensitivity" hypothesis false. Source: William DiPuccio.

The cooling Northern Hemisphere: March 2009 vs. 1998-2006

Visible cooling

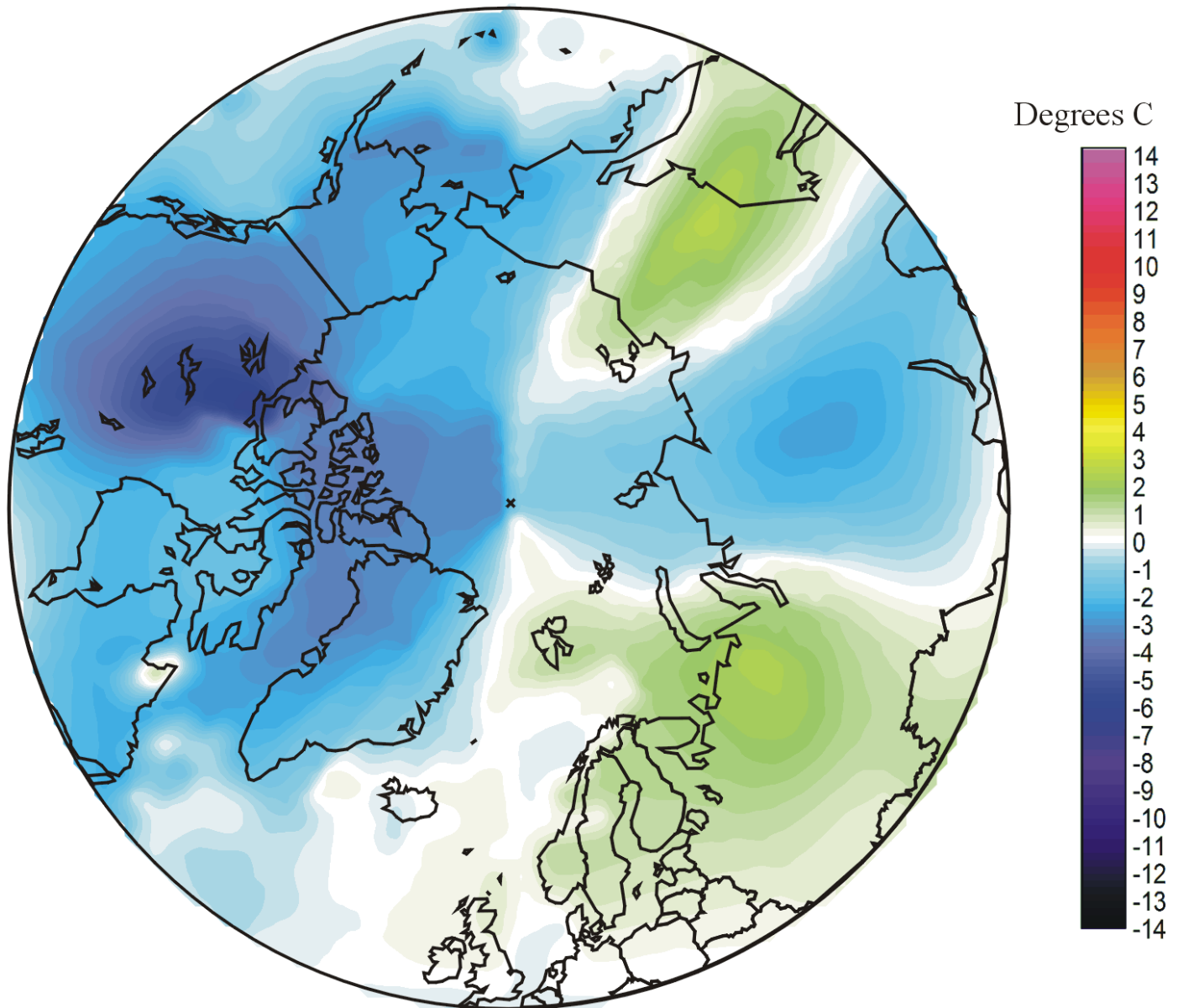
The colored chart (right) shows changes in mean surface temperatures for the principal regions of the Northern Hemisphere in March 2009, compared with mean surface temperatures for the same regions over the eight-year period 1998-2006.

Cooling is particularly evident over central North America, Alaska, and western Greenland, though there has been some warming over northern central Europe and eastern Russia.

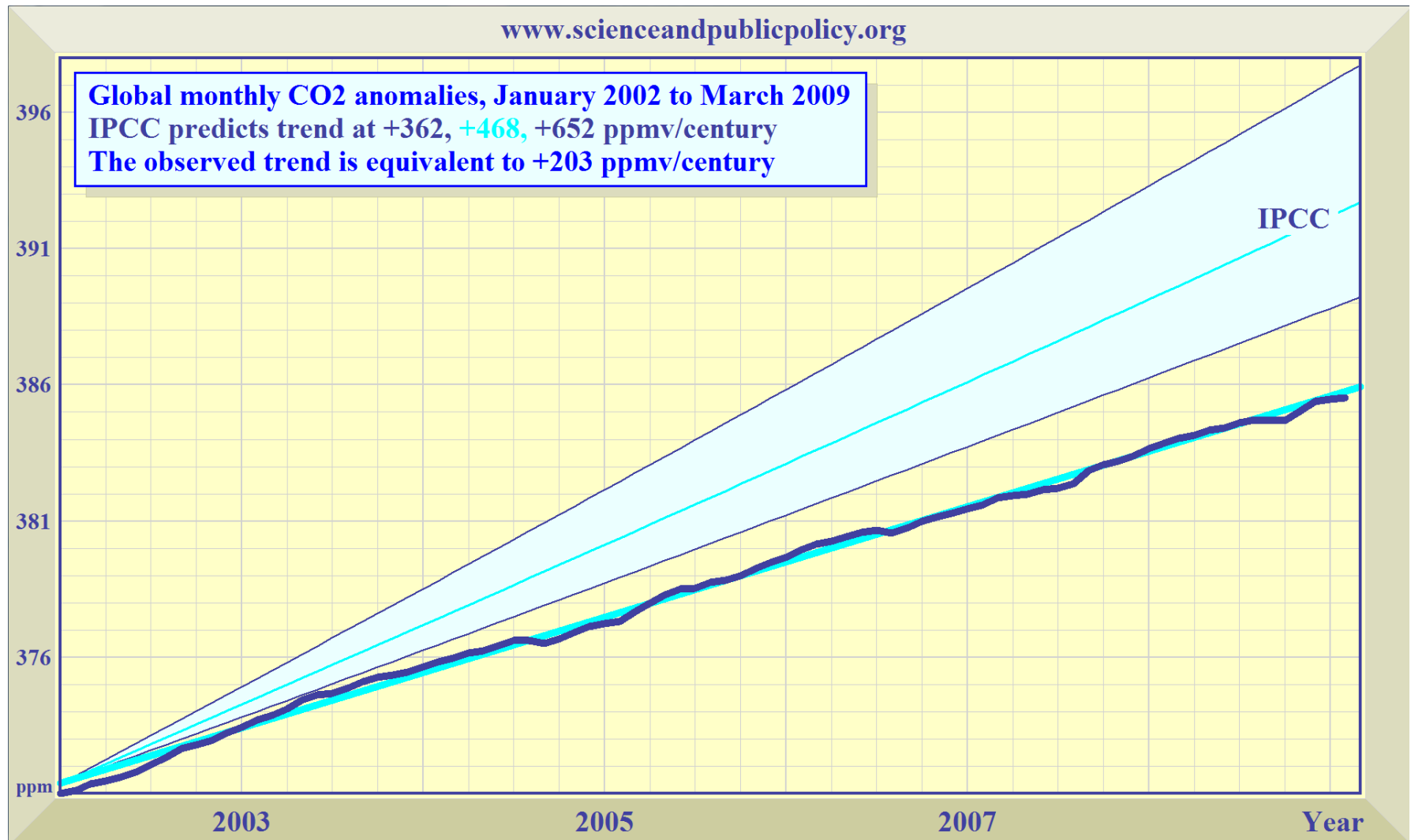
Overall, a pronounced hemispheric cooling is clearly visible, even though global mean surface temperatures in March 2008 had recovered from the recently-ended la Nina event.

Source: Ole Humlum

- *SPPI is always grateful to receive charts and data from scientists for inclusion here.*

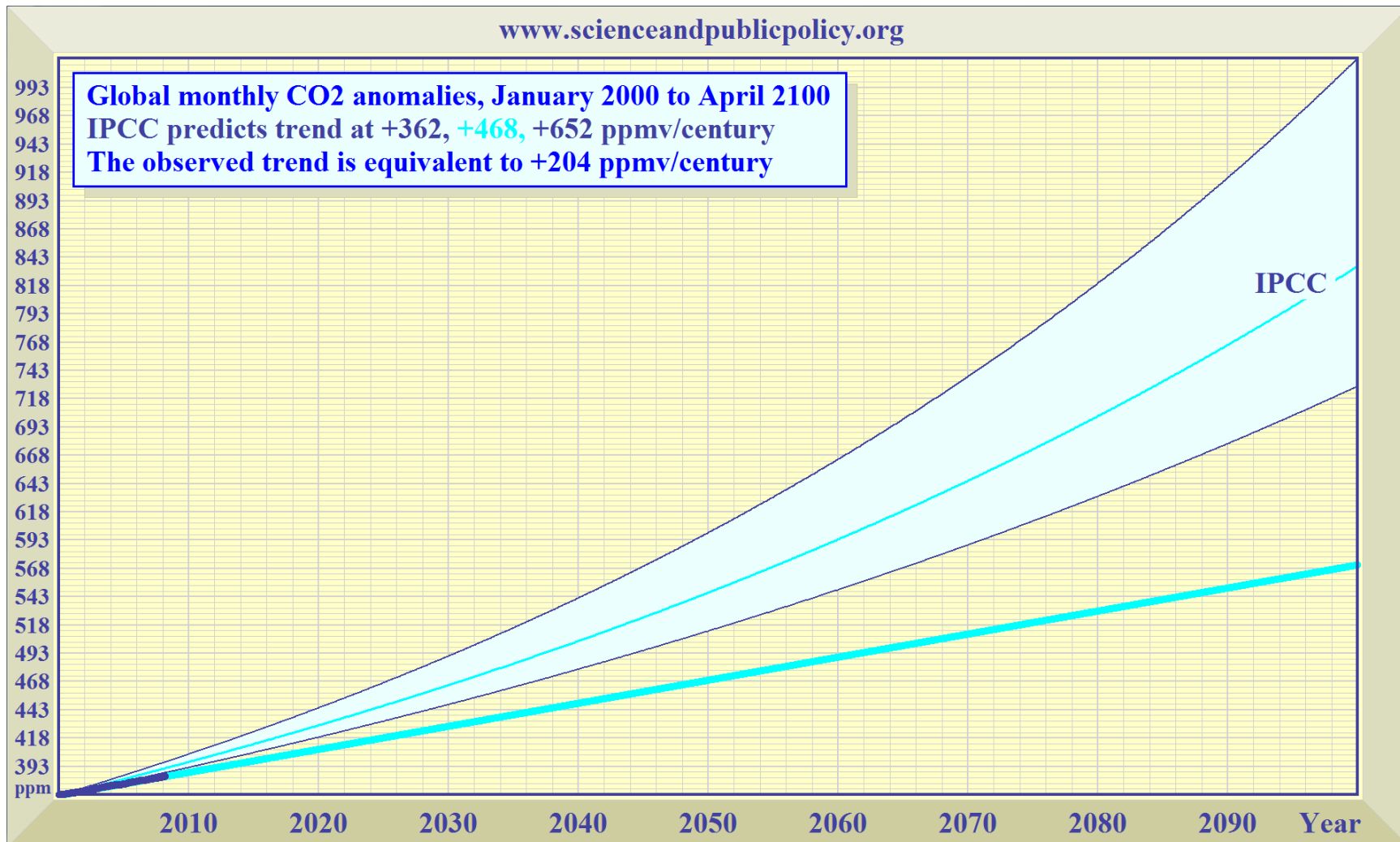


CO₂ concentration is rising, but still well below IPCC predictions



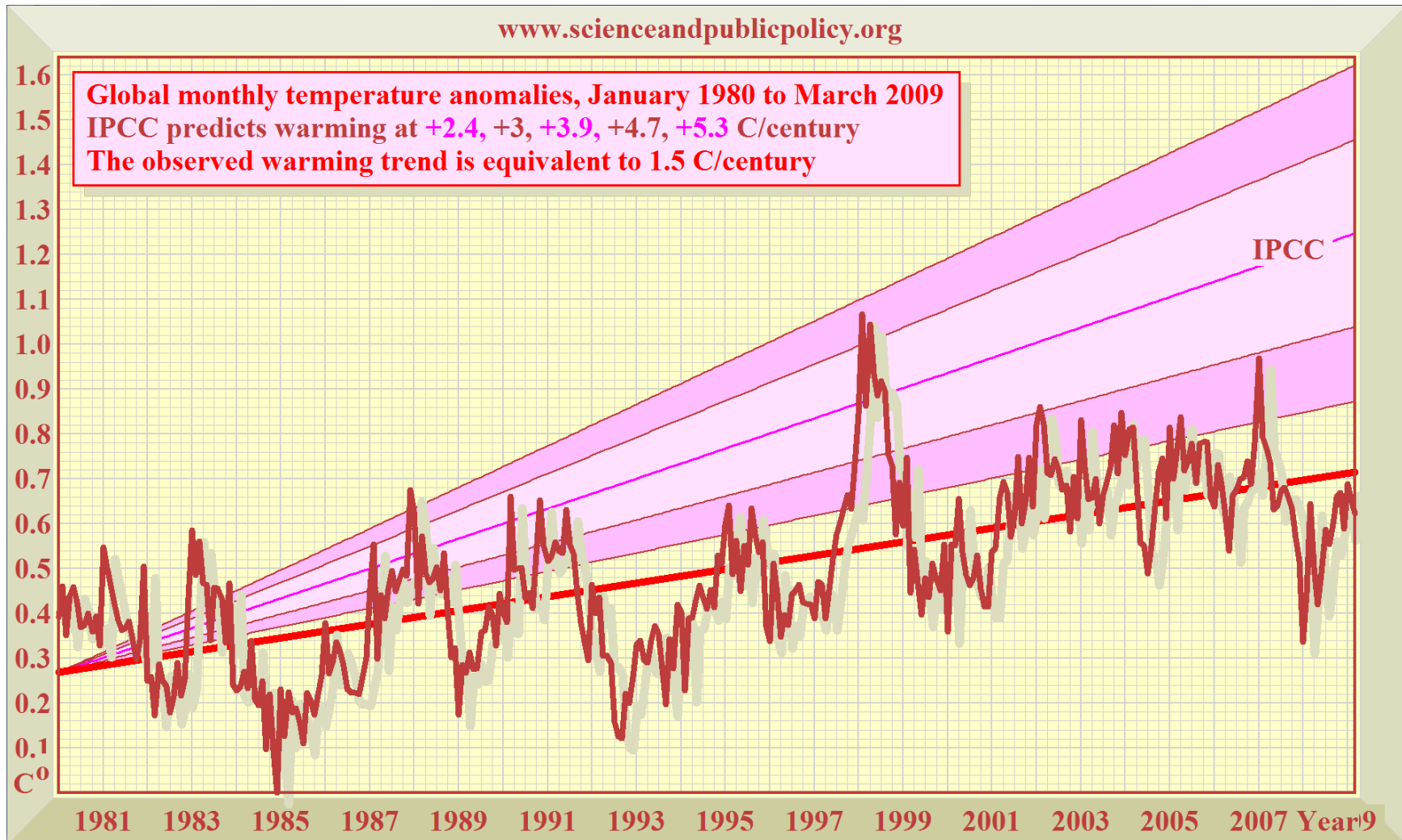
CO₂ is rising in a straight line, well below the IPCC's projected range (pale blue region). The deseasonalized real-world data are shown as a thick, dark-blue line overlaid on the least-squares linear-regression trend. There is no sign of the exponential growth predicted by the IPCC. **Data source:** NOAA.

IPCC predicts rapid, exponential CO₂ growth that is not occurring



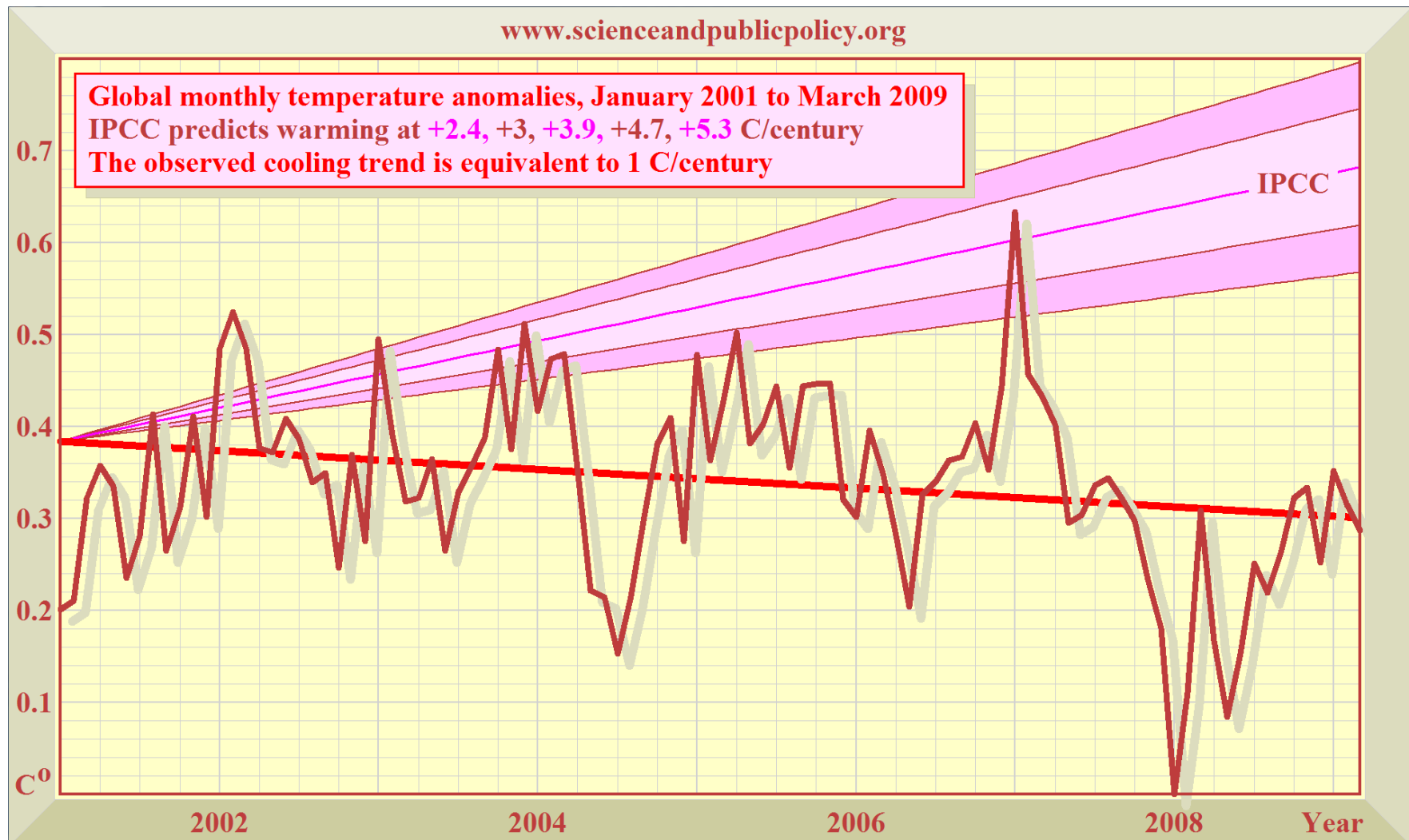
Observed CO₂ growth is linear, and is also well below the exponential-growth curves (bounding the pale blue region) predicted by the IPCC in its 2007 report. If CO₂ continues on its present path, the IPCC's central temperature projection for the year 2100 must be halved. Data source: NOAA.

The 29-year global warming trend is just 2.5 °F (1.5 °C) per century



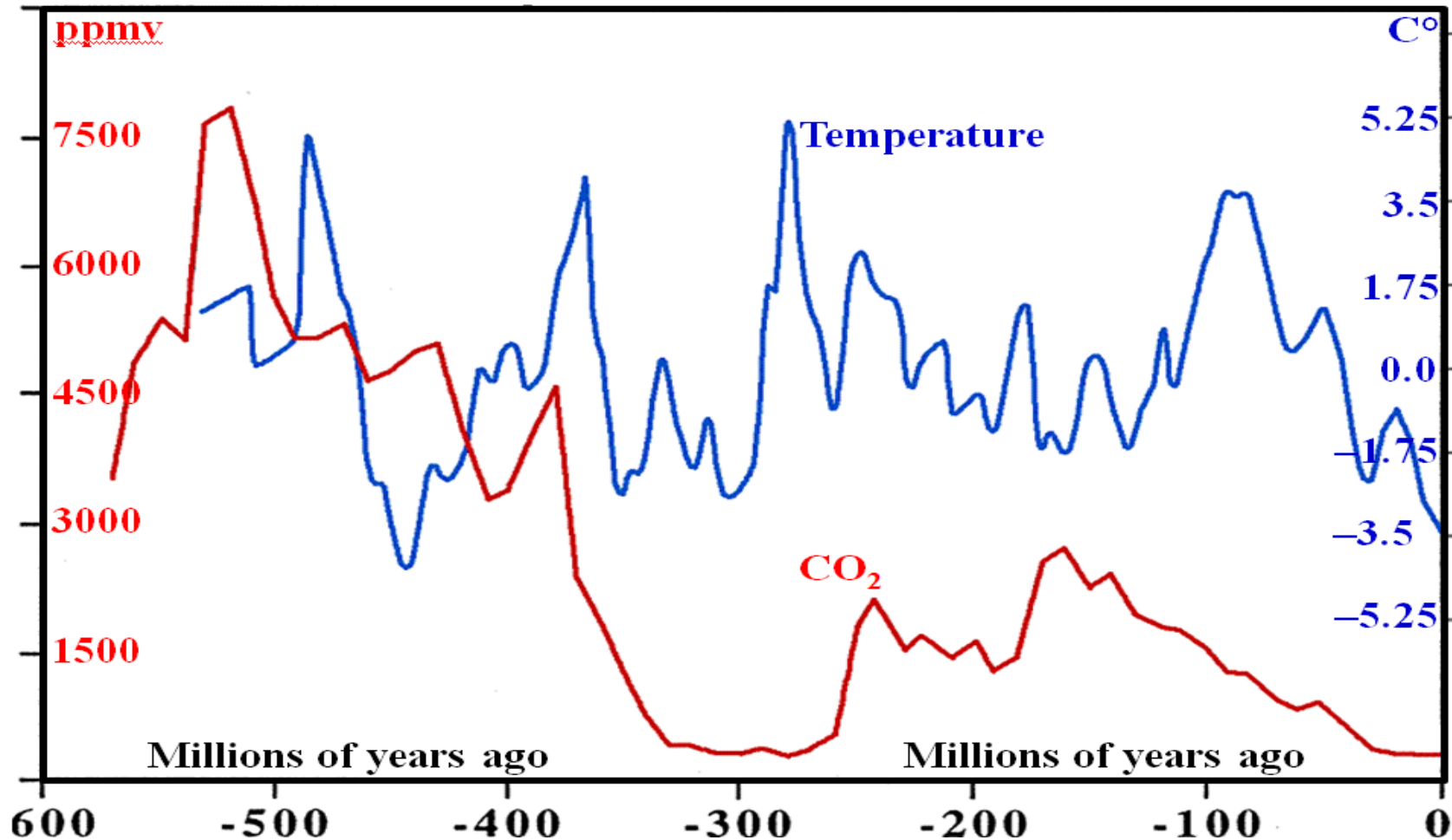
Global temperature for the past 29 full years has been undershooting the IPCC's currently-predicted warming rates (pink region). The warming trend (thick red line) has been rising at well below half of the IPCC's central estimate. **Data source:** SPPI index, compiled from HadCRUt3, NCDC, RSS, and UAH.

A long downtrend: 8 years' global cooling at 1.8 °F (1 °C) / century



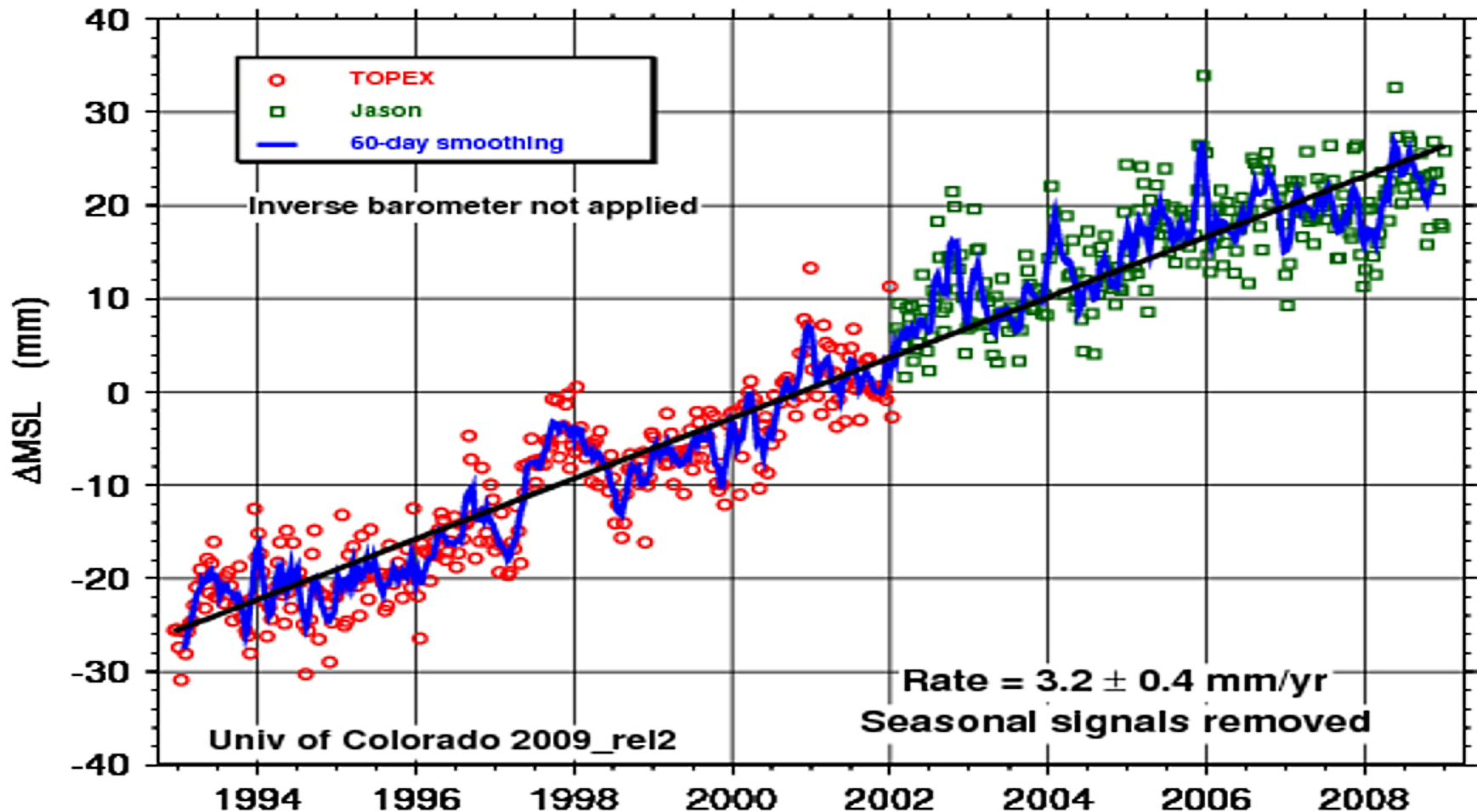
For eight and a half years, global temperatures have exhibited a pronounced downtrend. The IPCC's predicted warming path (pink region) bears no relation to the global cooling that has been observed in the 21st century to date. Source: SPPI global temperature index.

No correlation between CO₂ concentration and temperature



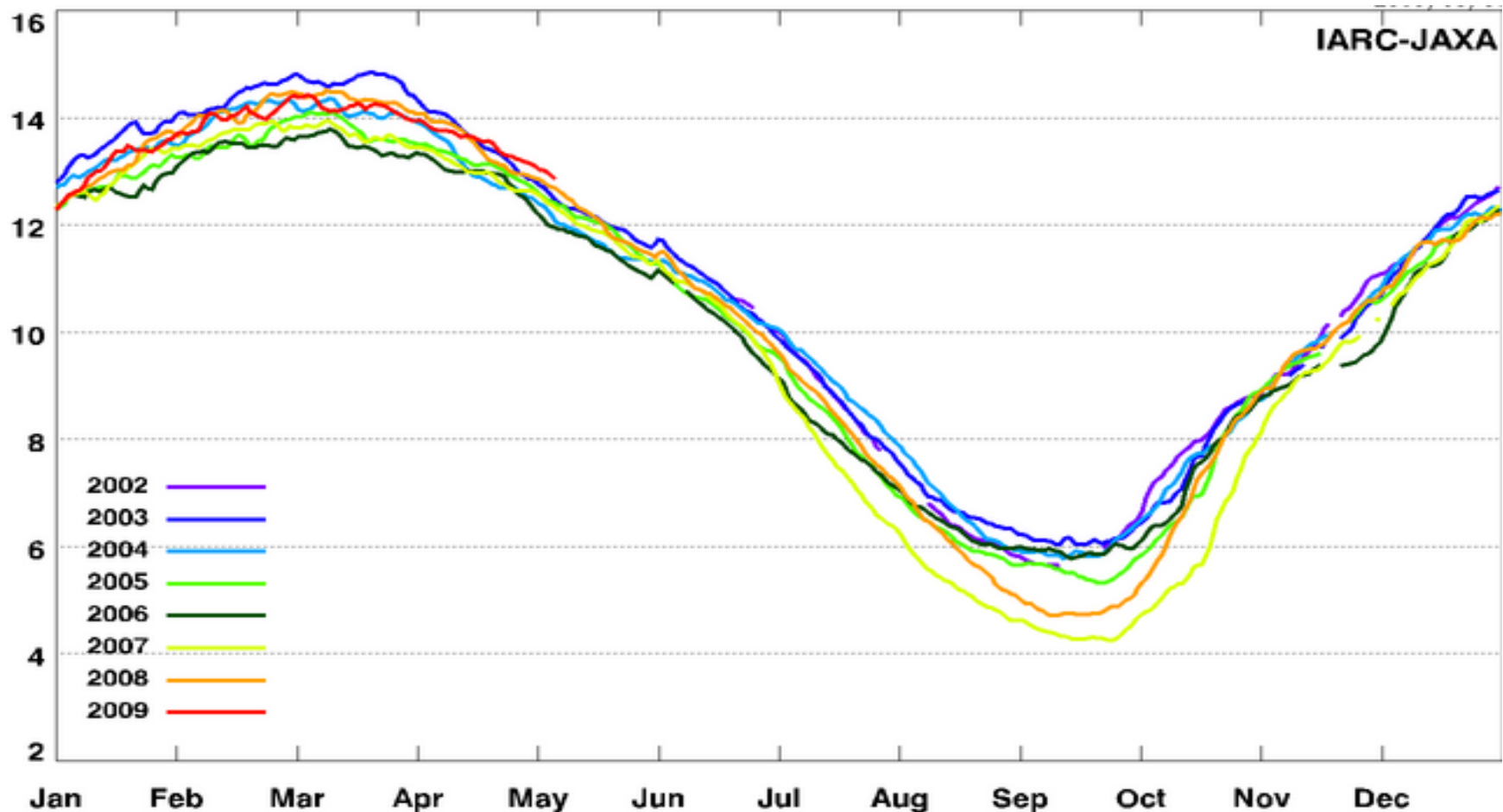
Global temperature bears no relation to CO₂ concentration over the past 600 million years. Left scale: Atmospheric CO₂ concentration (parts per million by volume, from Berner & Kothavala, 2001). Right scale: $\delta_{18}\text{O}$ (parts per thousand, 1 ppt \approx 1.5-2 C° temperature change, from Veiser et al., 1999). For most of the past 600 million years, CO₂ concentration was greater than 1000 ppmv, peaking at 8000 ppmv (approximately 20 times today's concentration) in the Cambrian era, 550 million years ago. Today's CO₂ concentration is less than 400 ppmv. Temperature, too, is lower today than at almost any time in the past 600 million years.

Sea level: Gore's "Armageddon scenario" is not occurring



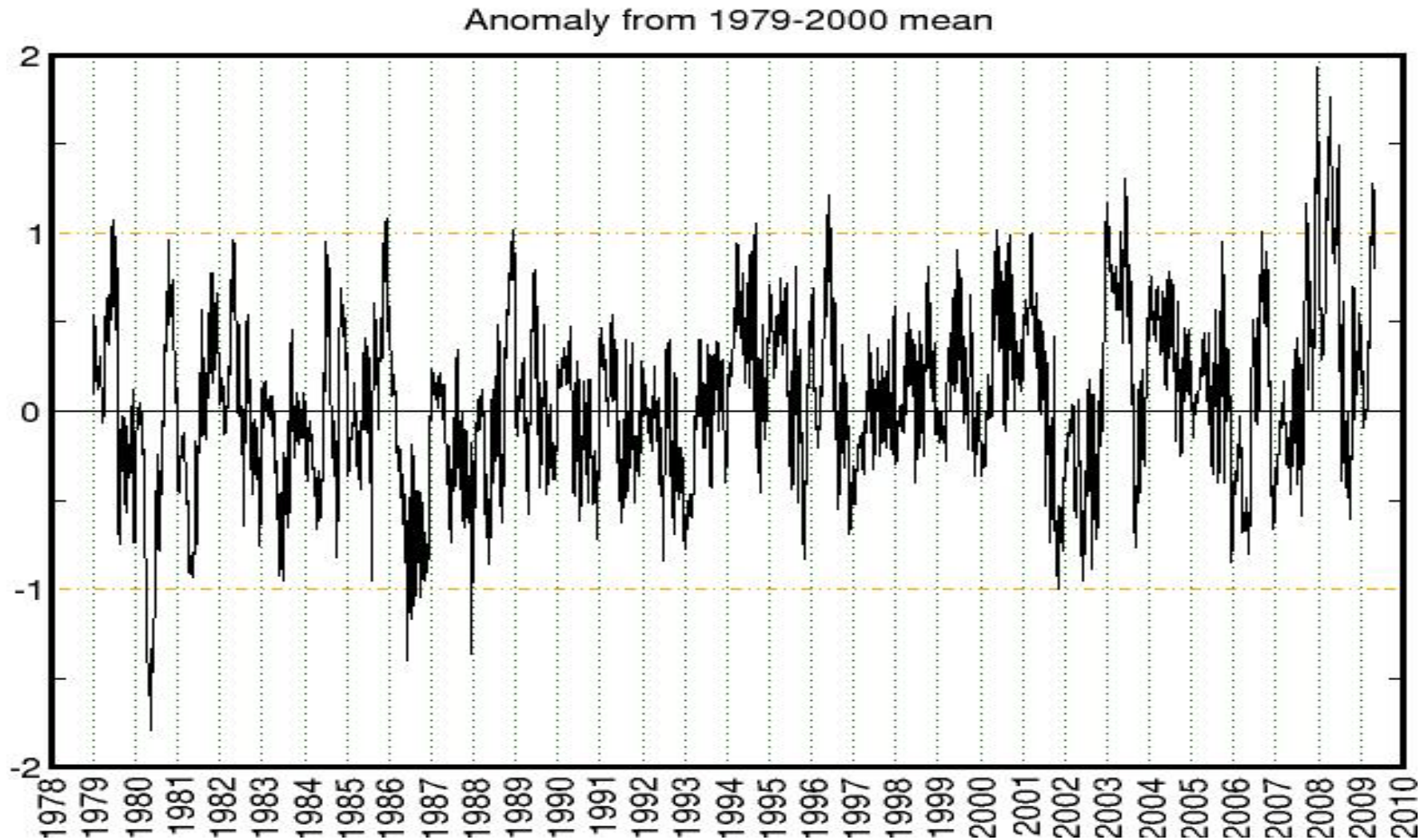
Sea level is scarcely rising: The average rise in sea level over the past 10,000 years was 4 feet/century. During the 20th century it was 8 inches. In the past three and a half years, sea level has scarcely risen at all. As recently as 2001, the IPCC had predicted that sea level might rise as much as 3 ft in the 21st century. However, this maximum was cut by more than one-third to less than 2 feet in the IPCC's 2007 report. Moerner (2004) says sea level will rise about 8 inches in the 21st century. Mr. Justice Burton, in the UK High Court, bluntly commented on Al Gore's predicted 20ft sea-level rise as follows: "The Armageddon scenario that he depicts is not based on any scientific view." *A fortiori*, James Hansen's prediction of a 246ft sea-level rise is mere rodomontade. **Source:** University of Colorado.

Arctic sea-ice extent is at an eight-year record high for late April



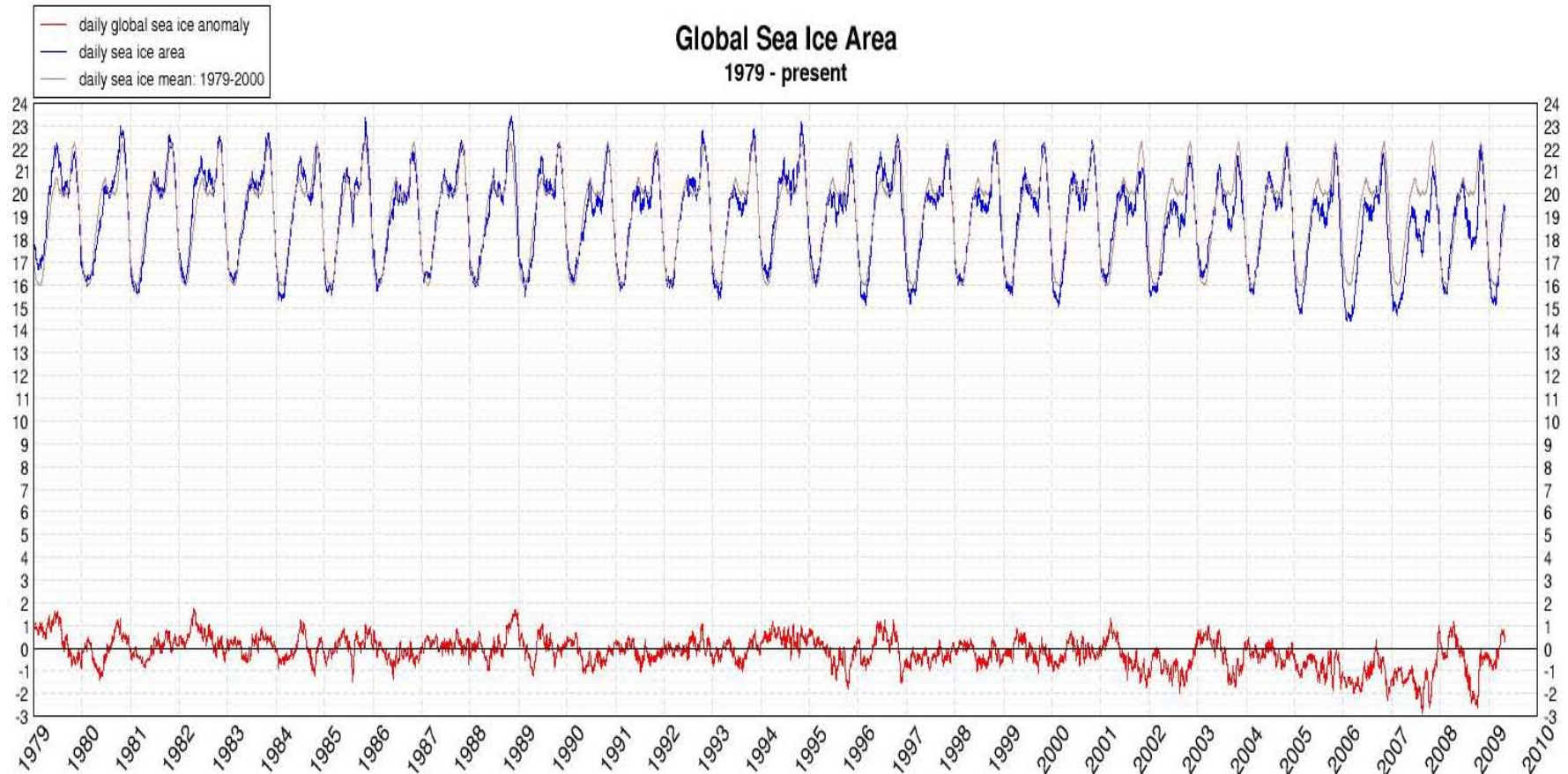
Arctic sea ice (millions of square kilometers: left scale): The red curve shows that the extent of sea ice in the Arctic is currently at an eight-year record high for the time of year. This fact has not been reported in any mainstream news medium: it is to be found only in the SPPI Monthly CO₂ Reports. For comparison, sea ice covered almost the same area of the Northern Hemisphere in April 2009 as it had done 29 years previously in April 1980. Summer sea ice covered its least extent in 30 years during the late summer of 2007. However, NASA has attributed that sudden decline to unusual poleward movements of heat transported by currents and winds. The decline cannot have been caused by “global warming”, because, as the SPPI Global Temperature Index shows, there has been a cooling trend globally during the past seven and a half years. At almost the same moment as summer sea-ice extent reached its 29-year minimum in the Arctic, sea-ice extent in the Antarctic reached its 29-year maximum, though the latter event was very much less widely reported in the media than the former. Source: IARC JAXA, Japan.

Antarctic sea-ice extent is at its third-greatest since records began



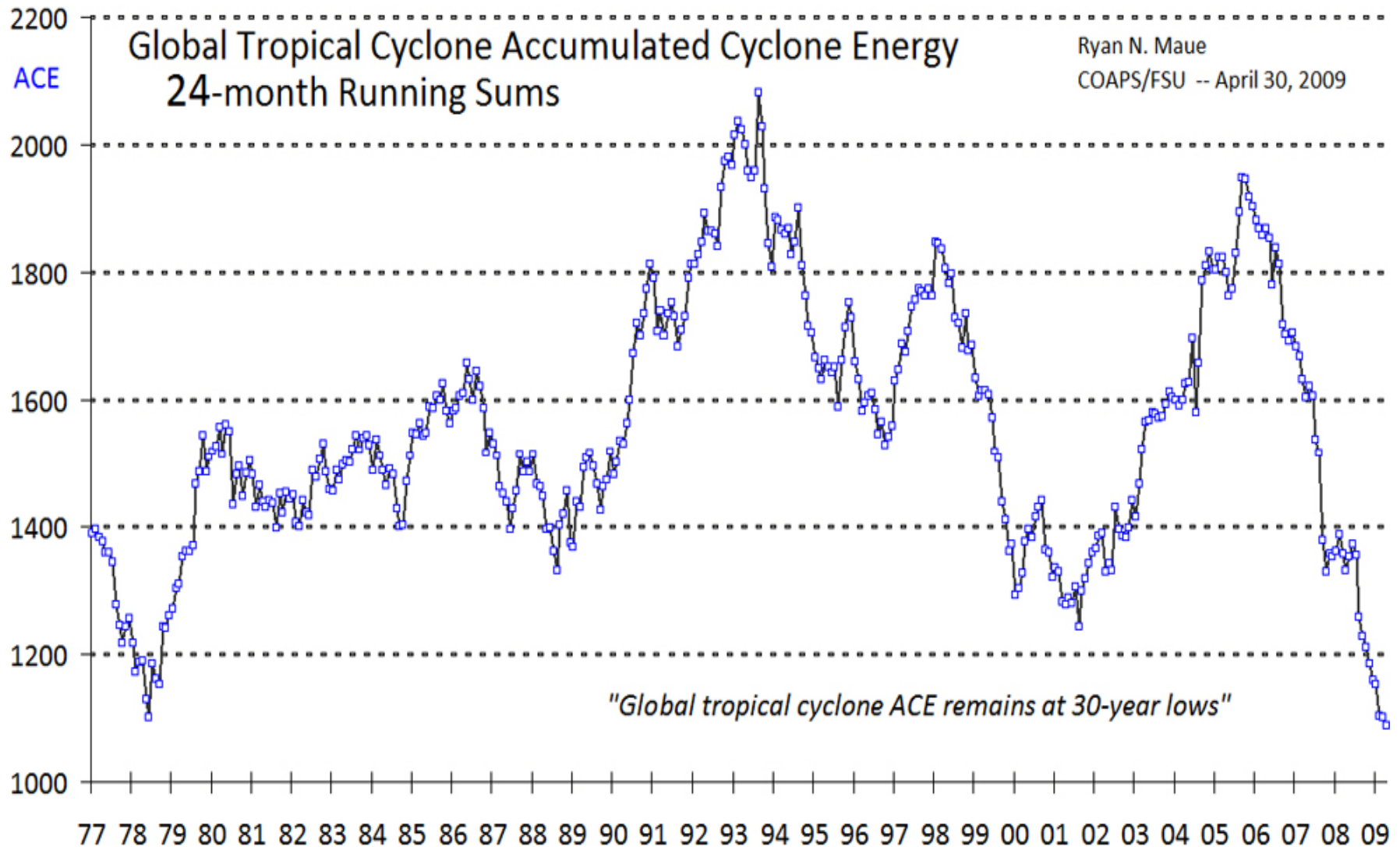
Antarctic sea-ice extent (millions of square kilometers: left scale) shows a gentle but definite uptrend over the past 30 years. The peak extent, which occurred late in 2007, followed shortly after the sharp decline in Arctic sea ice in the late summer of that year. Antarctic sea-ice extent is currently at its third-highest since satellite records began. Source: University of Illinois, April 2009.

The regular “heartbeat” of global sea-ice extent: steady for 30 years



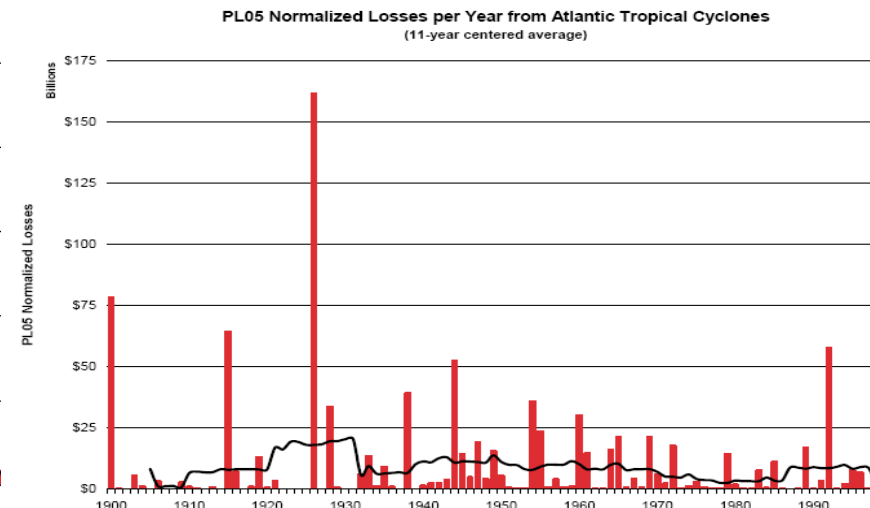
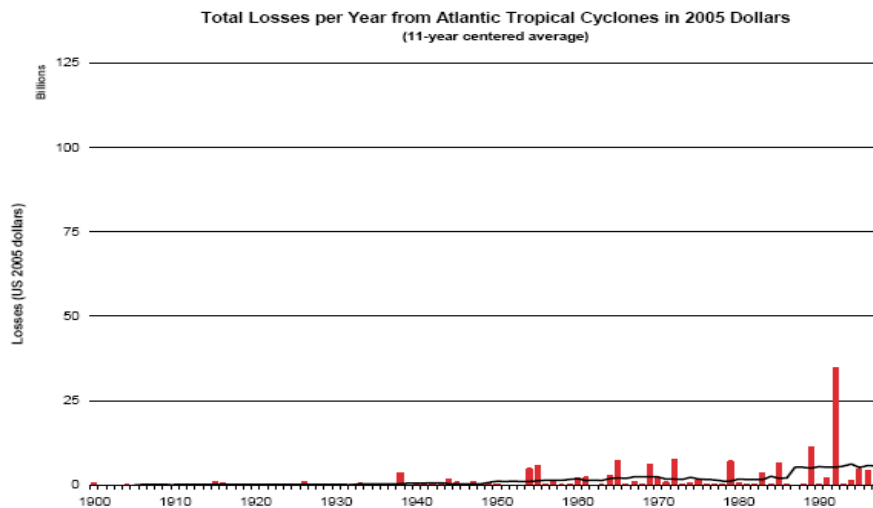
Planetary cardiogram showing global sea-ice area (millions of square kilometers): There has been a very slight decline in the trend (red) of global sea-ice extent over the decades, chiefly attributable to loss of sea ice in the Arctic during the summer, which was well below the mean in 2007, with some recovery in 2008. However, the 2008 peak sea-ice extent was exactly on the 1979-2000 mean, and current sea-ice extent is a little above the 1979-2000 mean. The decline in summer sea-ice extent in the Arctic, reflected in the global sea-ice anomalies over most of the past eight years, runs counter to the pronounced global atmospheric cooling trend over the same period, suggesting that the cause of the regional sea-ice loss cannot have been “global warming”. Seabed volcanic activity recently reported in the Greenland/Iceland gap, with seabed temperatures of up to 574 °F, may have contributed to the loss of Arctic sea-ice. **Source:** University of Illinois, April 2009.

Hurricane, typhoon, & tropical cyclone activity are at a record low



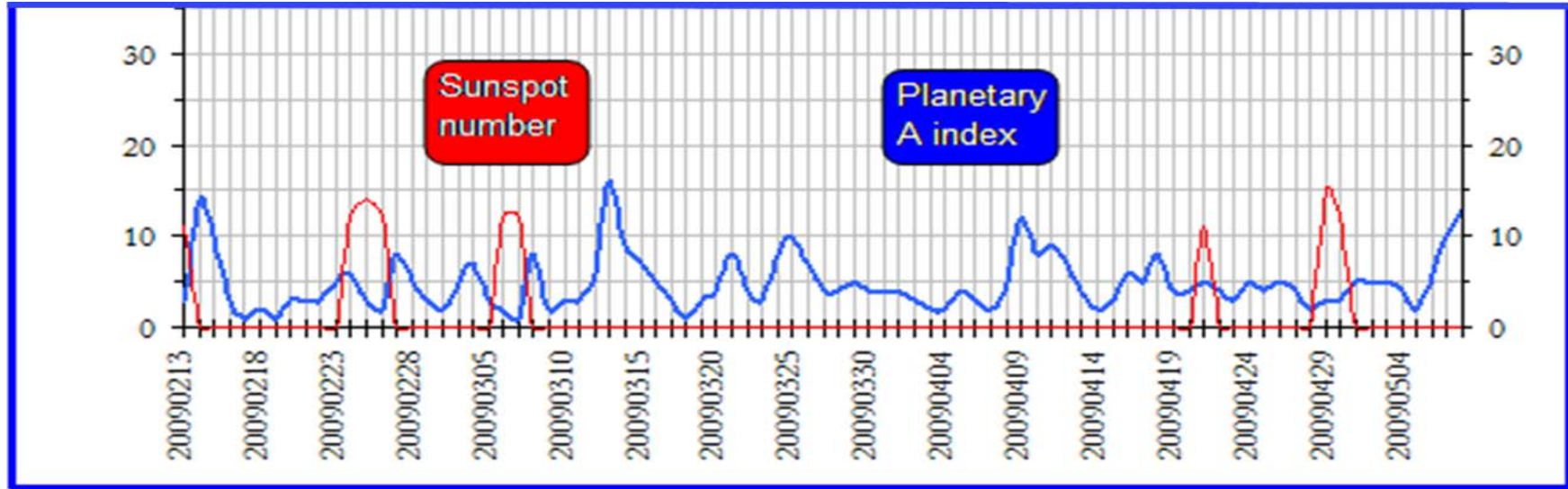
Hurricanes, typhoons, and other tropical cyclones have declined recently. Global activity of intense tropical storms is measured using a two-year running sum, known as the Accumulated Cyclone Energy Index, now standing at its least value in 30 years. **Source:** Ryan Maue, April 2009.

Population growth, not 'global warming', increases hurricane losses

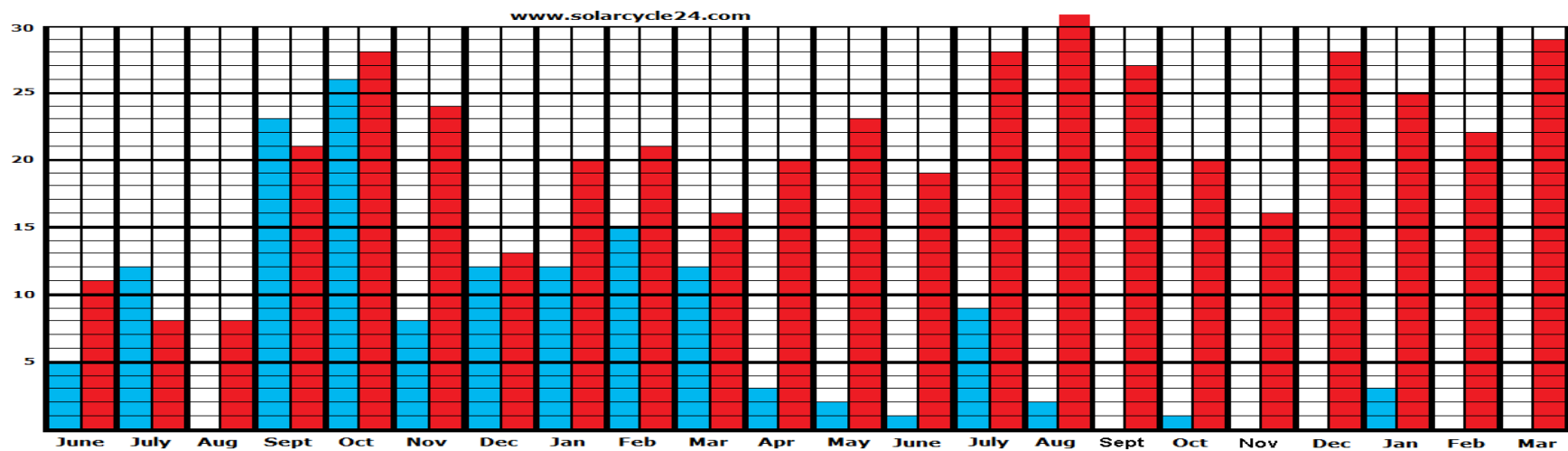


*Hurricane losses have not risen because of "global warming": they have risen because there has been a substantial increase in the number of buildings in the path of land-falling hurricanes. **The upper panels** show how Florida looked in 1920 and in 2007, showing the rapid growth in houses, hotels, and businesses. **The lower panels** show unadjusted hurricane losses (left) compared with losses after adjustment for inflation and population growth (right).*

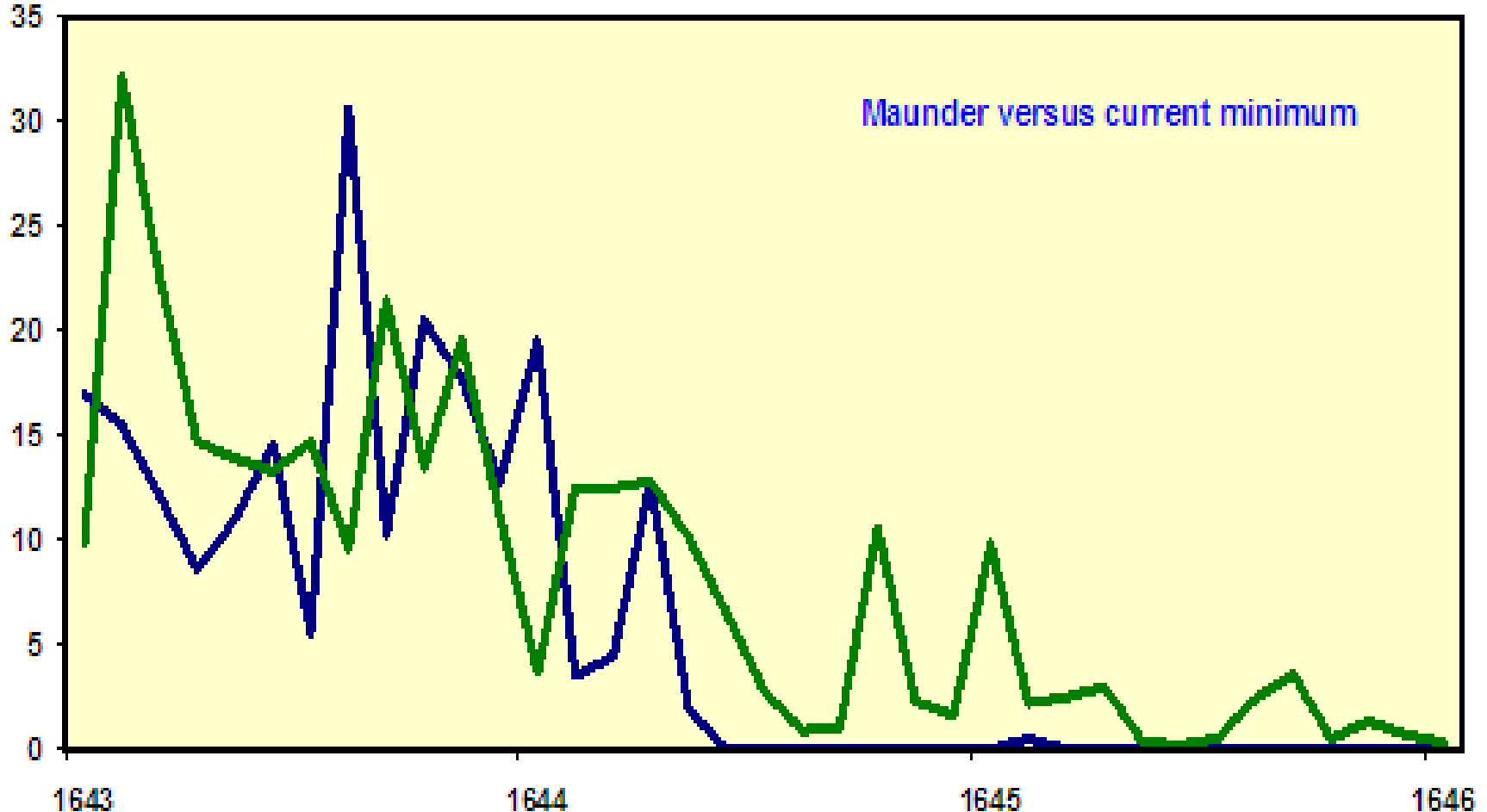
The prolonged solar minimum continues, with very few sunspots



Upper panel: Sunspot numbers (*red*) from 13 February to 9 May, 2009. Current sunspot activity is less than for 100 years. **Lower panel:** Number of days without any visible sunspots during the previous solar minimum (*blue*) and the present solar minimum (*red*). During the last ~11-year solar minimum, in September/October 2006, the longest period without sunspots was 37 days, compared with 44 days in March/April 2009. **Source:** Jan Alvestad, April 2009.



Are we heading for a Maunder Minimum and a frozen Thames?



Mean sunspot numbers for the Maunder or Grand Solar Minimum (blue) and the current solar minimum (green). This intriguing comparison, drawn by David Archibald and displayed recently at www.wattsupwiththat.com, raises the question whether the Sun is once again about to enter a prolonged period of severe cooling similar to the 70-year Maunder Minimum from 1645 to 1715, during which there were almost no sunspots visible on the solar surface and the rivers Thames and Hudson regularly froze over during the winter. The sharp downturn in solar activity over the past three years appears to match the recently-observed ocean cooling and the continuing decline in mean global surface temperatures. It is possible that the IPCC has considerably underestimated the influence of the Sun on the Earth's climate, correspondingly overestimating the influence of our carbon dioxide emissions. **Source:** Dr. David Archibald.

SPPI MONTHLY CO₂ REPORT :: SCIENCE FOCUS

SPOTLIGHT ON THE CHANGING SCIENCE BEHIND THE CHANGING CLIMATE

How data revisionism prolongs a dying scare

LAST MONTH *Science Focus* presented a discussion kindly supplied by Professor Richard Lindzen, demonstrating that satellite measurements of outgoing long-wave radiation from the Earth's surface showed 7-10 times as much escaping to space as the UN's computer models had predicted, implying that the UN has overestimated the effect of CO₂ enrichment on global temperature 7-10fold.

The scale of this exaggeration is in line with the 6-8fold exaggeration of predicted ocean warming demonstrated earlier in this *Monthly CO₂ Report*. Ocean warming is another crucial but absent signature of anthropogenic “global warming” on the scale imagined by the UN. The ocean cooling and the failure of observed outgoing long-wave radiation to match prediction are both in line with the climate-sensitivity calculations of Monckton (2008), Schwartz (2007), and many others, showing that the anthropogenic influence on global temperatures over the whole of the 20th century may be as little as 0.5 Celsius degrees (less than 1 Fahrenheit degree).

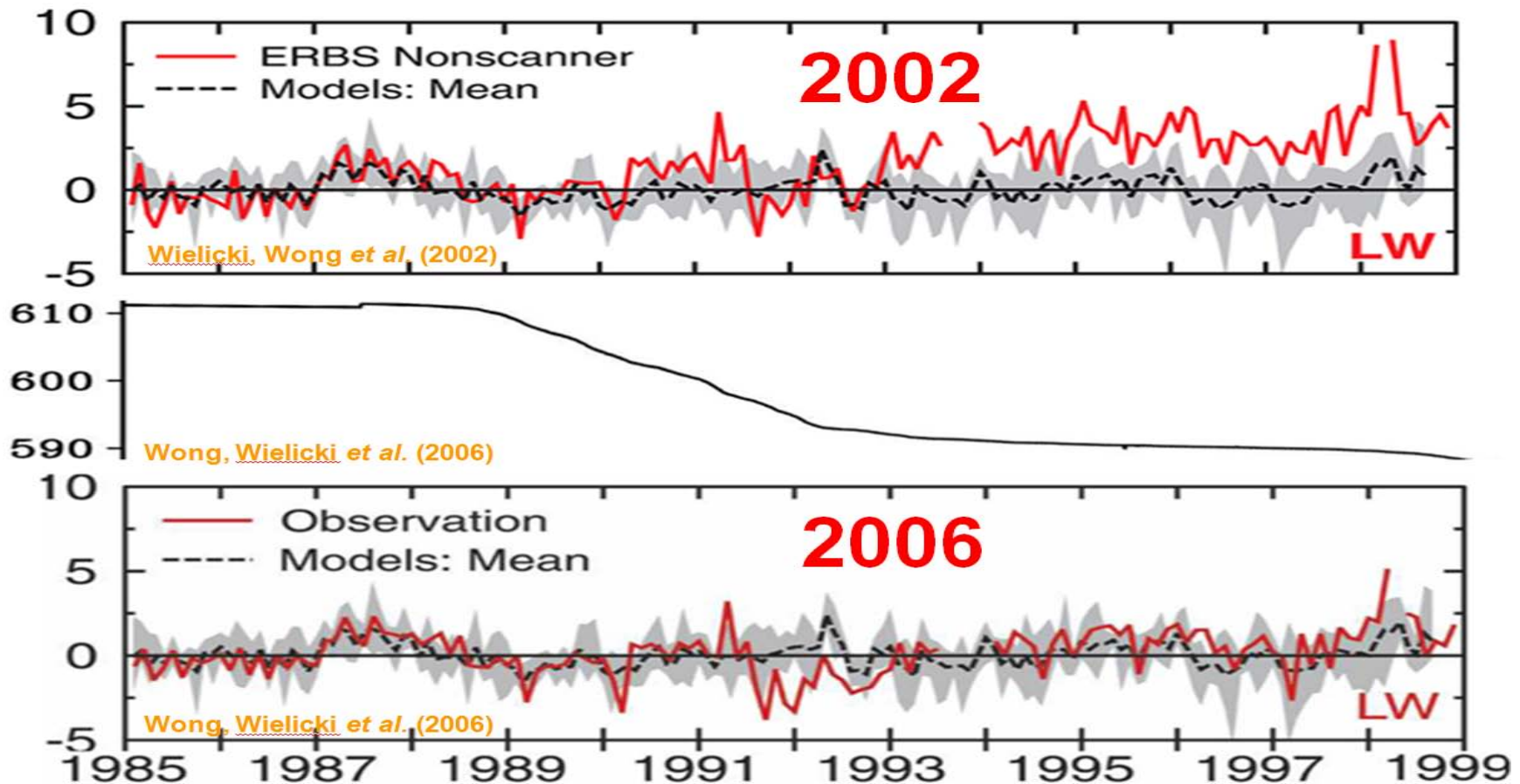
Global Warming is Primarily Caused By...			
Date	Human activity	Planetary Trends	Other Reason
Apr 09	34%	48%	7%
Mar 09	41%	43%	7%
Feb 09	38%	45%	7%
Jan 09	44%	41%	7%
Dec 08	43%	43%	6%
Apr 08	47%	34%	8%

Source: Rasmussen Polls, 2008-9

This powerful combination of empirical and theoretical results comes close to proving that the UN has gotten its sums wrong, with potentially catastrophic consequences for nations, such as the United States, whose politicians labor under the misguided impression that promising to close down up to five-sixths of their economies in the name of “Saving The Planet” – a disaster for rich and poor alike, but especially for the poor – somehow demonstrates “leadership”. Fortunately, the people, at least in the US, have seen through the “global warming” scare, perhaps because the relentless propaganda in the media, in Congress, and in the White House is simply too overdone to be credible.

Opinion polls, such as the Rasmussen tracking polls whose results are shown at left, demonstrate that there has been an astonishing reversal of public opinion over the past year in the US – in fact, a 13.5% swing away from the alarmist belief that the “global warming” that ceased in 1998 is caused by humankind's activities. The tiny clique of financially and politically linked scientists and politicians who are driving the “global warming” scare have long been aware that their propaganda was failing, and they have responded with some increasingly desperate revisions to the raw data. This month's *Science Focus* provides some illustrations of what we shall call “data revisionism” – bending scientific results to suit a failed theory.

We begin with “data revisionism” as applied to the 2002 graph of outgoing long-wave radiation (top panel below) that we showed in last month’s *Science Focus*. Four years later, the same authors, with the intriguing addition of one of the dozen or so scientists most responsible for fabricating and peddling the “global warming” scare, produced a second paper that revised the graph so that the observed outgoing long-wave radiation came suspiciously close to the UN’s predictions (bottom panel). The pretext for this startling instance of data revisionism was that the authors of the 2002 paper had failed to take into account the orbital degradation of the Earth Radiation Budget Experiment Satellite (center panel) –



Observed (**red**) long-wave flux anomalies in Watts per square meter for the tropics against the mean of five climate model simulations (**black**) using observed sea surface temperature, and the total range of model-predicted anomalies (**gray band**). **Top panel:** The original graph. **Bottom panel:** the revised graph published four years later, allegedly to take account of orbital degradation in the ERBE satellite (**in kilometers: center panel**).

We leave it to readers of *Science Focus* to decide for themselves whether the scientists who produced the first graph could possibly have made so fundamental an error as to fail to allow for the fact that every satellite tends to move closer to the Earth with each orbit. However, it is startlingly evident that the adjustments to the lower graph do not correspond at all well with the non-uniform changes in the rate of orbital degradation shown in the center panel.

It is also worth recalling that the results obtained in the 2002 paper, which were reached by inadvertence because the authors were not considering the impact on “global warming” at all, were sufficiently startling to induce many other research groups to replicate the results. At least four groups did so, as reported in last month’s *Science Focus* -

CHEN, J., B.E. Carlson, and A.D. Del Genio. **2002.** Evidence for strengthening of the tropical general circulation in the 1990s. *Science* **295**: 838-841.

CESS, R.D., and P.M. Udelhofen. **2003.** Climate change during 1985–1999: Cloud interactions determined from satellite measurements. *Geophys. Res. Ltrs.* **30**:1: 1019, doi:10.1029/2002GL016128.

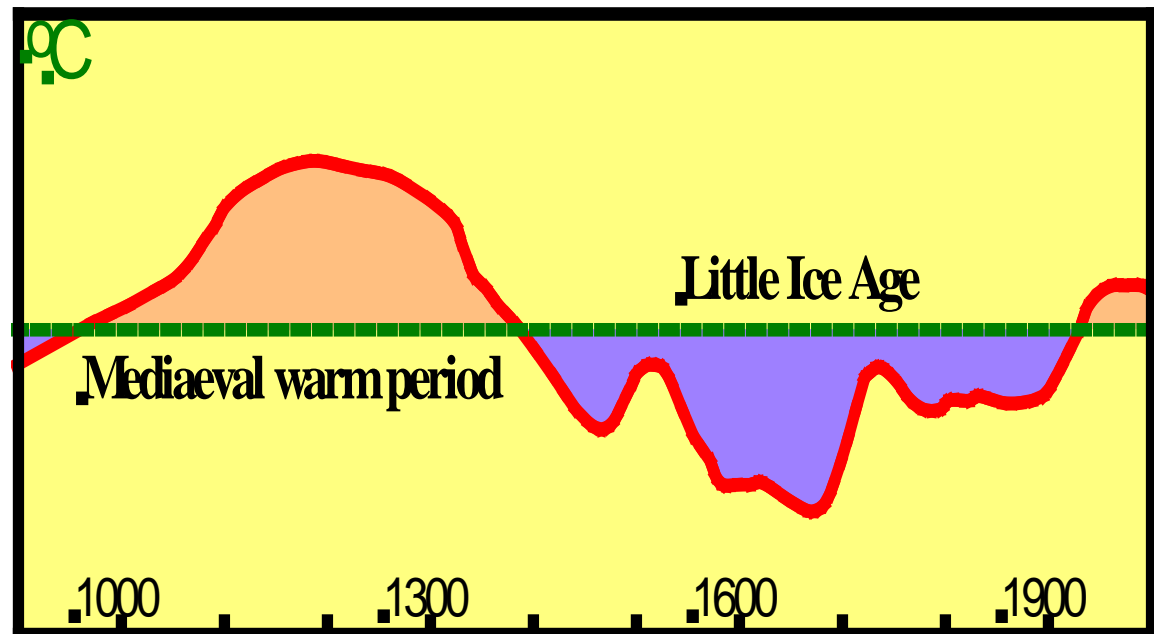
HATZIDIMITRIOU, D., I. Vardavas, K. G. Pavlakis, N. Hatzianastassiou, C. Matsoukas, and E. Drakakis. **2004.** On the decadal increase in the tropical mean outgoing longwave radiation for the period 1984–2000. *Atmos. Chem. Phys.* **4**: 1419–1425.

CLEMENT, A.C., and B. Soden. **2005.** The sensitivity of the tropical-mean radiation budget. *J. Clim.* **18**: 3189-3203.

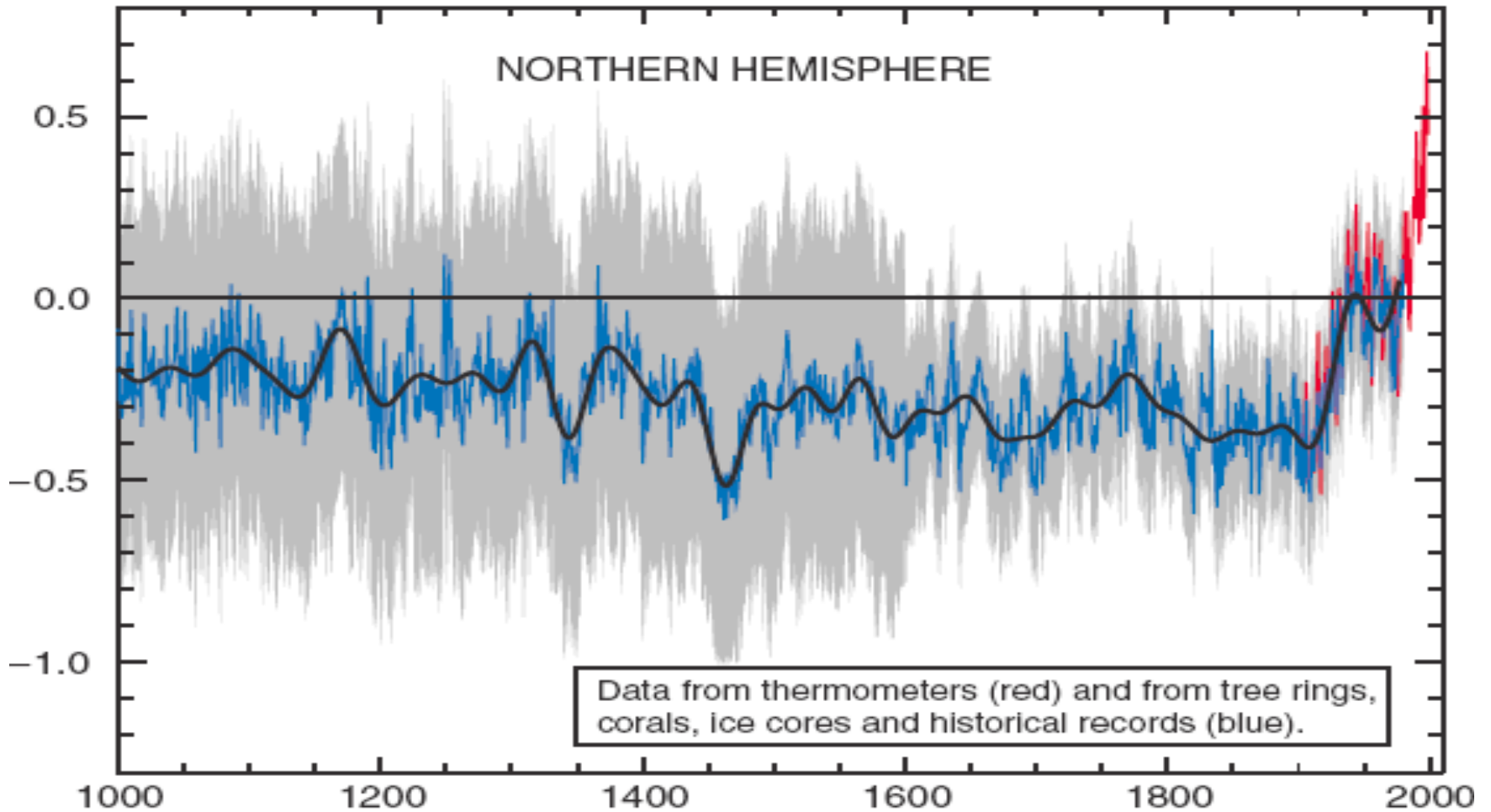
Perhaps the most notorious instance of data revisionism was the disfiguring attempt by the IPCC to deny the existence of the medieval warm period, during which global mean surface temperature was warmer than the present, as shown (right) in the IPCC’s own graph, from its 1990 assessment report.

The medieval warm period has always been an embarrassment to those who promote the notion that today’s global temperature is exceptional.

In 1995, David Deming, a researcher into paleotemperature, was told, “We have to abolish the medieval warm period.” This declaration of prejudice shocked him.

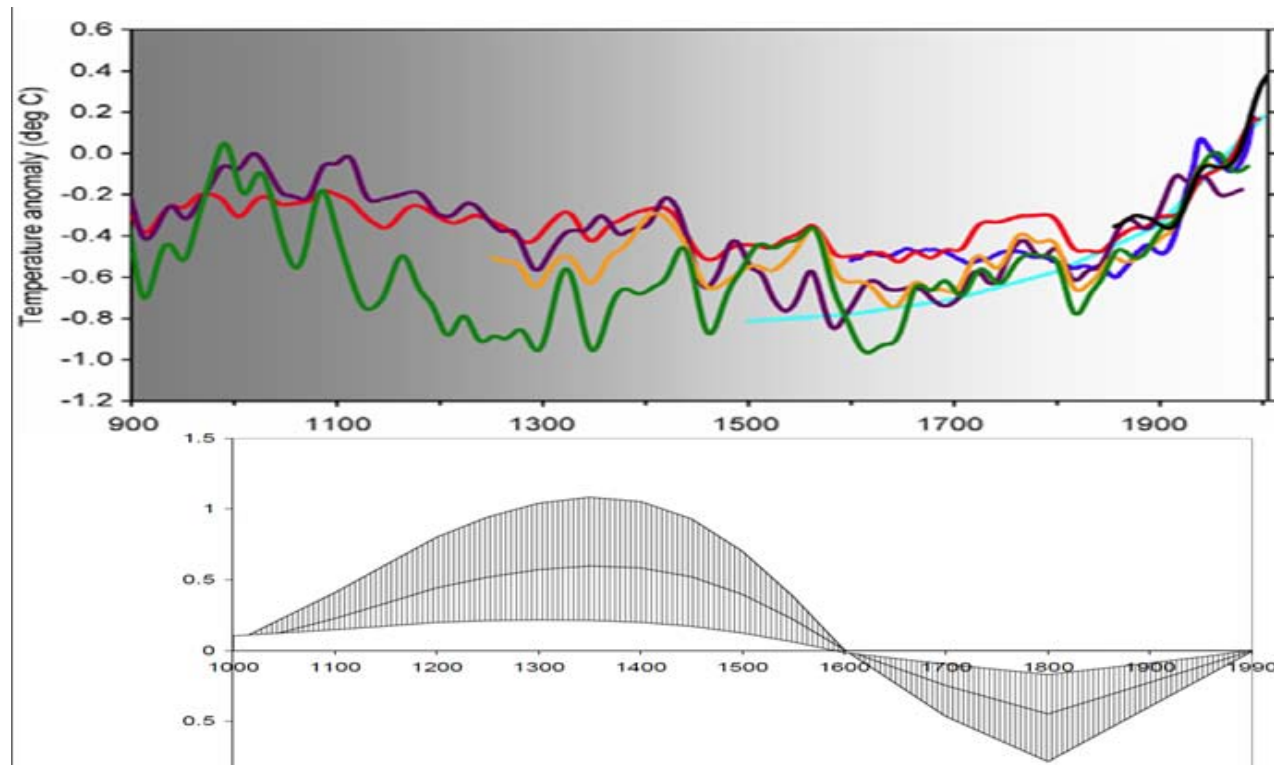


Sure enough, by the time of the IPCC's 2001 report the medieval warm period had been duly abolished, by the use of a series of highly questionable statistical techniques that demonstrate how data revisionism is practiced by the pedlars of "global warming" –



Now you see it, now you don't: The medieval warm period is absent from the IPCC's 2001 graph of northern-hemisphere temperature. Nor is that the only irregularity. Instrumental measurements show that global temperature increased by 0.74 Celsius degrees from 1900-2000: here, however, the increase appears to be closer to 1.2 Celsius degrees, an increase of 60% over real-world observation.

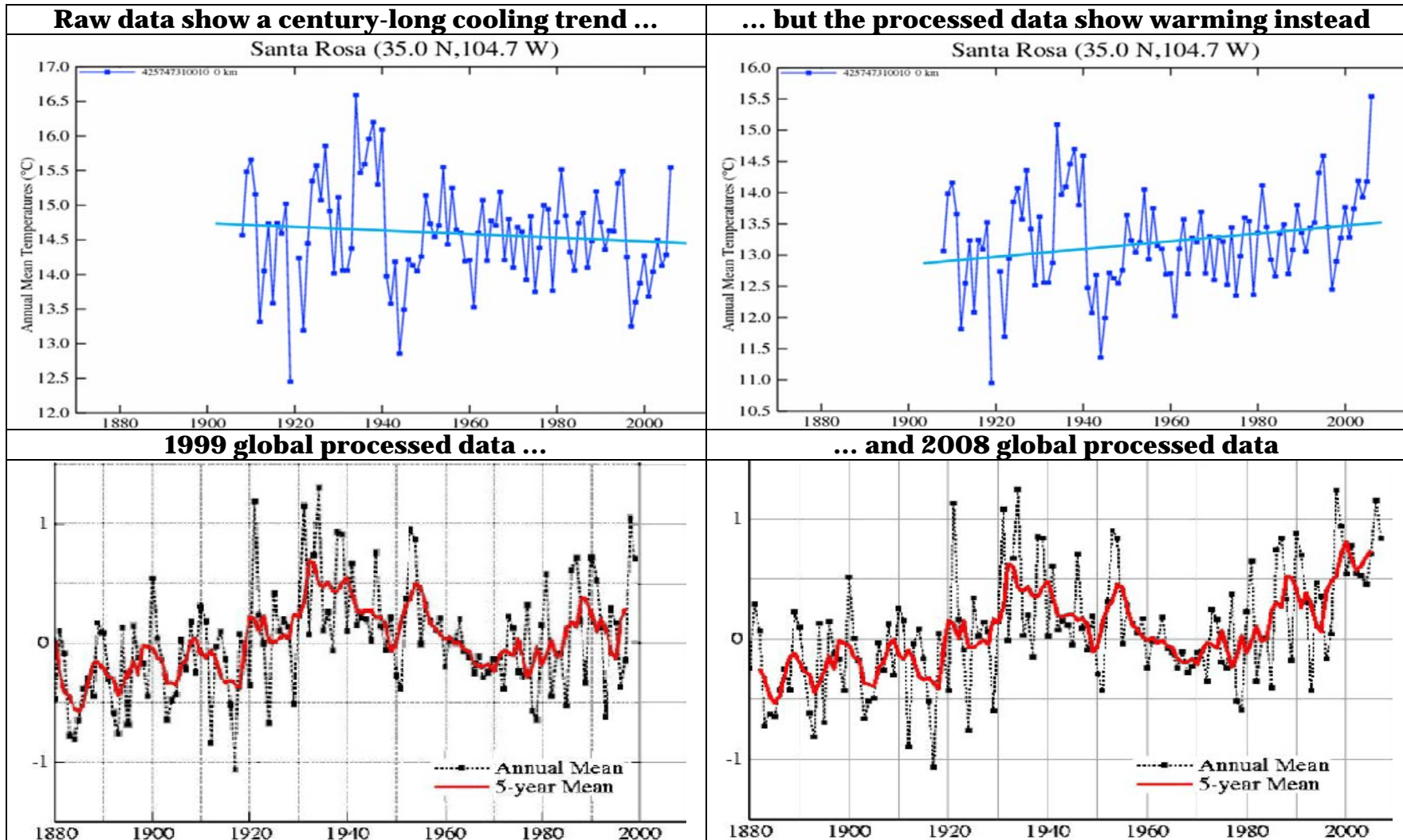
How was this remarkable feat achieved? Read http://scienceandpublicpolicy.org/monckton/what_hockey_stick.html, which fully explains the corrupt science that produced the IPCC's bent graph. See also www.co2science.org, where the medieval warm period database contains papers by **almost 700 scientists from more than 400 institutions in 40 countries**, establishing beyond reasonable doubt that the medieval warm period was real, was global, and was warmer than the present. After widespread protest by the scientific community, the National Research Council in the US considered the question of the graph that abolished the medieval warm period, and concluded that it had a validation skill not significantly different from zero – in effect, that it was useless. The NRC produced its own graph that partially restored the medieval warm period (upper panel below) –



Gradual re-emergence of the medieval warm period: The NRC (**upper panel**) partially restored the medieval warm period. However, the pale blue curve is merely a part of a longer dataset (**lower panel**) that, if the NRC had presented it in full, would have demonstrated the medieval warm period by Bayesian probabilities based on 600 borehole measurements (Huang et al., 1998: data supplied by Huang and processed by McKittrick, 2005).

Another example of data revisionism will be found in the IPCC's statistically-disreputable attempt, in its 2007 report, to pretend that the rate of "global warming" has been accelerating for more than a century (see the *Monthly CO2 Report* for January 2009).

We end this series of examples of data revisionism with an illustration of the way in which the Goddard Institute of Space Studies has “processed” the raw data from temperature stations so as to increase the apparent warming rate of the late 20th century –



Prestidigitation: The GISS raw temperature data for a single station (**upper left**) show cooling. The data after “adjustment” (**upper right**) somehow show warming. The GISS global-temperature dataset, after adjustment, as it stood in 1999 (**lower left**) and in 2008 (**lower right**). The data peak in the 1930s has been reduced in the later version of the dataset, and the 1998 peak has been markedly increased, artificially increasing the 20th-century warming rate and implying that tampering has increased over the years. **Data source:** Anthony Watts.

Your climate-sensitivity ready reckoner

Here is a step-by-step, do-it-yourself ready-reckoner which will let you use a pocket calculator to make your own instant estimate of global temperature change in response to increases in atmospheric CO₂ concentration.

- ✚ **STEP 1:** Decide how far into the future you want your forecast to go, and estimate how much CO₂ will be in the atmosphere at that date. *Example:* Let us do a forecast to 2100. The **MONTHLY CO₂ REPORT** charts show CO₂ rising to $C = 575$ parts per million by the end of the century, compared with $B = 385$ parts per million in late 2008.
- ✚ **STEP 2:** Next, work out the *proportionate increase* C/B in CO₂ concentration. In our example, $C/B = 575/385 = 1.49$.
- ✚ **STEP 3:** Take the *natural logarithm* $\ln(C/B)$ of the proportionate increase. If you have a scientific calculator, find the natural logarithm directly using the “ln” button. If not, look up the logarithm in the table below. In our example, $\ln 1.49 = 0.40$.

<i>n</i>	1.0	1.1	1.1	1.2	1.2	1.3	1.3	1.4	1.4	1.5	1.5	1.6	1.6	1.7	1.7	1.8	1.8	1.9	1.9	2.0
	5	0	5	0	5	0	5	0	5	0	5	0	5	0	5	0	5	0	5	0
l	0.0	0.1	0.1	0.1	0.2	0.2	0.3	0.3	0.3	0.4	0.4	0.4	0.5	0.5	0.5	0.5	0.6	0.6	0.6	0.6
n	5	0	4	8	2	6	0	4	7	1	4	7	0	3	6	9	2	4	7	9
<i>n</i>	2.0	2.1	2.1	2.2	2.2	2.3	2.3	2.4	2.4	2.5	2.5	2.6	2.6	2.7	2.7	2.8	2.8	2.9	2.9	3.0
	5	0	5	0	5	0	5	0	5	0	5	0	5	0	5	0	5	0	5	0
l	0.7	0.7	0.7	0.7	0.8	0.8	0.8	0.8	0.9	0.9	0.9	0.9	0.9	0.9	1.0	1.0	1.0	1.0	1.0	1.1
n	2	4	7	9	1	3	5	8	0	2	4	6	7	9	1	3	5	6	8	0

- ✚ **STEP 4:** Choose a *climate sensitivity coefficient* c from the table below –

Coefficient c ...	SPPI minimum	SPPI central	SPPI maximum	IPCC minimum	IPCC central	IPCC maximum
... for C°	0.7	1.4	2.1	2.9	4.7	6.5
... for F°	1.25	2.50	3.75	5.25	8.5	11.75

- ✚ **STEP 5:** Find the *temperature change* ΔT by multiplying the natural logarithm of the proportionate increase in CO₂ concentration by your climate sensitivity coefficient. In our example, we’ll chose the IPCC central estimate $c = 3.75$ F. Then –

$$\Delta T = c \ln(C/B) = 3.75 \times 0.40 = \underline{1.5 \text{ F}^\circ}, \text{ your predicted manmade warming to 2100. It's as simple as that!}$$

SPPI MONTHLY CO₂ REPORT :: NEW SCIENCE

BREAKING NEWS IN THE JOURNALS, FROM [WWW.CO2SCIENCE.ORG](http://www.co2science.org)

The *Monthly CO₂ Report* summarizes key recent scientific papers, selected from those featured weekly at www.co2science.org, that significantly add to our understanding of the climate question. This month we review papers about the effects of “global warming” on North Atlantic and Northern European storminess, West Antarctic Ice Sheet collapse, ocean acidification of marine coccolithophores, and viral diseases. Our final paper gives evidence that the Middle Ages were warmer than today.

Thirty-Second Summary

- There is "no sign of a sustained enhanced storminess signal associated with 'global warming'."
- The transition time for a total collapse of the West Antarctic ice sheet would range from "1000 to several thousand years."
- "In the real ocean the larger coccolithophore species increase their calcification in response to anthropogenic CO₂ release," contrary to what typically occurs in the lifeless "virtual ocean" of certain theoreticians.
- By far and away the most significant cause of enhanced viral diseases in recent years has *not* been global warming.
- 697 scientists from 406 institutions in 40 countries on the www.co2science.org Medieval Warm Period database say the Middle Ages were warmer than today.

Northern European and North Atlantic Storminess

- Hanna, E., Cappelen, J., Allan, R., Jonsson, T., Le Blanco, F., Lillington, T. and Hickey, K. 2008. New insights into North European and North Atlantic surface pressure variability, storminess, and related climatic change since 1830. *Journal of Climate* **21**: 6739-6766.

Among the highly publicized changes in weather phenomena that are predicted by climate alarmists to attend the ongoing rise in the air's CO₂ content are increases in the frequency and severity of nearly all types of storms. This contentious claim is a most appropriate backdrop for the study of Hanna *et al.*, who studied the temporal variability of the new dp(abs)₂₄ *pressure-variability index* over the past 160 years via data obtained from "long-running meteorological stations in Denmark, the Faroe Islands, Greenland, Iceland, the United Kingdom, and Ireland," after first showing that the index is "significantly related to wind speed and is therefore a good measure of Atlantic and Northwest European storminess and climatic variation." The results indicated that there were "periods of relatively high dp(abs)₂₄ and enhanced storminess around 1900 and the early to mid-1990s, and a relatively quiescent period from

about 1930 to the early 1960s, in keeping with earlier studies." However, they report "**there is little evidence that the mid- to late nineteenth century was less stormy than the present, and there is *no sign* [our italics] of a sustained enhanced storminess signal associated with 'global warming'.**" And in further discussing their findings, the researchers say their analysis "lends a cautionary note to those who suggest that anthropogenic greenhouse warming probably results in enhanced extratropical storminess, as this is indicated neither by our own nor existing published observational results for the northeast Atlantic for the last ~150 years."

The West Antarctic Ice Sheet: How Fast Could It Collapse?

- Pollard, D. and DeConto, R.M. 2009. Modelling West Antarctic ice sheet growth and collapse through the past five million years. *Nature* **458**: 329-332.
- Huybrechts, P. 2009. West-side story of Antarctic ice. *Nature* **458**: 295-296.

Employing a greatly-improved "ice sheet/ice shelf model capable of high-resolution nesting with a new treatment of grounding-line dynamics and ice-shelf buttressing to simulate Antarctic ice sheet variations over the past five million years," Pollard and DeConto modeled West Antarctic Ice Sheet (WAIS) variations ranging from "full glacial extents with grounding lines near the continental shelf break, intermediate states similar to modern, and brief but dramatic retreats, leaving only small, isolated ice caps on West Antarctic islands." Their work indicated, in the authors' words, that "the WAIS will *begin* [our italics] to collapse when nearby ocean temperatures warm by roughly 5°C." So how long would it take to *complete* the process? In a News & Views story on Pollard and DeConto's findings, Huybrechts (2009) states that "the amount of nearby ocean warming required to generate enough sub-ice-shelf melting to initiate a significant retreat of the West Antarctic ice sheet ... may well take several centuries to develop." And once started, he says that **the transition time for a total collapse of the West Antarctic ice sheet would range from "one thousand to several thousand years,"** which time period, in his words, "is nowhere near the century timescales for West Antarctic ice-sheet decay based on simple marine ice-sheet models," such as have been employed in the past. Once again, the specter of 21st-century sea level rise being measured in *meters* -- as hyped by Al Gore and James Hansen -- can be seen to be receding ever further into the distance of unreality.

Ocean Acidification and Marine Coccolithophores

- Halloran, P.R., Hall, I.R., Colmenero-Hidalgo, E. and Rickaby, R.E.M. 2008. Evidence for a multi-species coccolith volume change over the past two centuries: understanding a potential ocean acidification response. *Biogeosciences* **5**: 1651-1655.

Working with materials derived from a sediment core extracted from the subpolar North Atlantic Ocean, Halloran *et al.* analyzed the size distribution of CaCO₃ particles in the less-than-10-µm sediment fraction over the past quarter-century. The work revealed "a changing particle volume since the late 20th century consistent with an increase in the mass of coccoliths produced by the larger coccolithophore species," which included *Oolithotus fragilis*, *Calcidicus leptoporus*, *Coccolithus pelagicus* var. *pelagicus*, and *Helicosphaera carteri*. As a result, Halloran *et al.* say their data suggest that "**in the real ocean the larger coccolithophore species increase their calcification in response to anthropogenic CO₂ release,**" contrary to what typically occurs in the *lifeless "virtual ocean" of certain theoreticians*, who see bad consequences in nearly everything that could possibly be related to the historical rise in the air's CO₂ concentration. They also state that "such a calcification response could be attributed to an alleviation of CO₂ limitation in

species that partly rely on the diffusive supply of dissolved carbon dioxide for photosynthesis, as demonstrated by a rise in photosynthetic efficiency with increasing carbon dioxide in cultures of *E. huxleyi*."

The Impact of 'Global Warming' on Viral Diseases

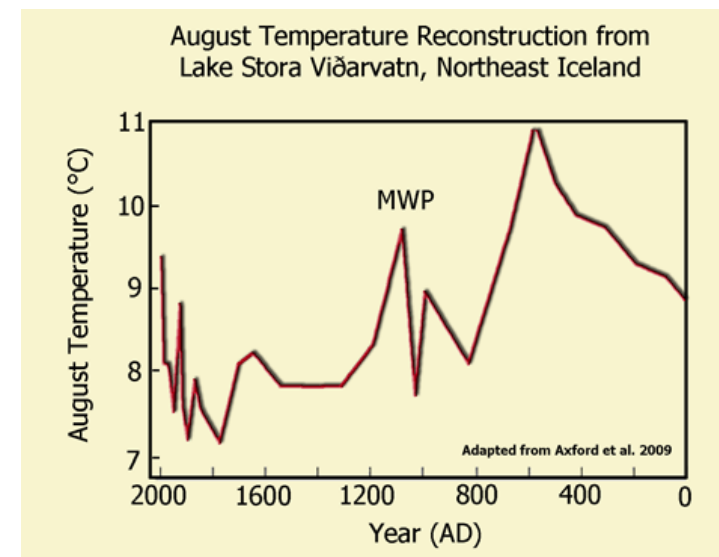
- Zell, R., Krumbholz, A. and Wutzler, P. 2008. Impact of global warming on viral diseases: what is the evidence? *Current Opinion in Biotechnology* **19**: 652-660.

According to Zell *et al.*, "it is assumed that global warming is forced by the anthropogenic release of 'greenhouse gases'," and that a further "consistent assumption" has been a consequent "increased exposure of humans to tropical pathogens and their vectors." However, they also note "there is dissent about this hypothesis (Taubes, 1997; Reiter, 2001; Hay et al., 2002; Reiter et al., 2003; Randolph, 2004; Zell, 2004; Halstead, 2008)," and they thus go on to explore it in a bit more detail by reviewing the pertinent literature and describing "those mechanisms that have lead to an increase of virus activity in recent years." Based on their review, the three German researchers found that "only very few examples point toward global warming as a cause of excess viral activity." Instead, they determined that "coupled ocean/atmosphere circulations and continuous anthropogenic disturbances (increased populations of humans and domestic animals, socioeconomic instability, armed conflicts, displaced populations, unbalanced ecosystems, dispersal of resistant pathogens etc.) appear to be the major drivers of disease variability," and that "global warming *at best* [our italics] contributes." Thus, **by far and away the most significant cause of enhanced viral diseases in recent years has not been global warming.** In fact, two whole *classes* of factors have dominated human virology during this period.

The Middle Ages were warmer than today Lake Stora Viðarvatn, Northeast Iceland

- Axford, Y., Geirsdottir, A., Miller, G.H. and Langdon, P.G. 2009. Climate of the Little Ice Age and the past 2000 years in northeast Iceland inferred from chironomids and other lake sediment proxies. *Journal of Paleolimnology* **41**: 7-24.

The authors developed a regional climatic record from a sediment core retrieved from lake Stora Viðarvatn in northeast Iceland (66°14.232'N, 15°50.083'W) in the summer of 2005, based on chironomid assemblage data that were well correlated with nearby measured temperatures over the 170-year period of the instrumental record. With respect to the MWP, the four researchers report that their data indicated "warm temperatures in the tenth and eleventh centuries, with one data point suggesting temperatures slightly warmer than present," which -- as best we can determine from the graph of their results, reproduced below, -- yields **a peak MWP temperature 0.4°C greater than the peak CWP temperature.**



Valiant for truth: The top ten climate realists on the planet



*These ten playing-cards, imitating the "most-wanted" cards circulated by the US Army as it liberated Iraq, were devised by The Guardian, a British propaganda sheet. **David Bellamy** used to broadcast regularly till he questioned "global warming": the BBC does not allow free speech on this issue. **Christopher Booker** writes a trenchant weekly column exposing "global warming" in the Sunday Telegraph. **Melanie Phillips** is a distinguished columnist with the Daily Mail. **Senator James Inhofe** is the US Senate's most influential critic of "global warming". Alaska, where **Sarah Palin** is Governor, needs all the warming it can get. **Christopher Monckton** sings Gilbert and Sullivan (unless I can be stopped). **Pat Michaels** advises the Cato Institute on climate. **Steve Milloy** runs the indispensable www.junkscience.com. **Vaclav Klaus** is President of the Czech Republic, and of the European Union. **Sammy Wilson**, environment minister for Northern Ireland, is an outspoken critic of "global warming" alarmism. Without these gallant few, the truth that "global warming" is a global fraud would have taken much longer to emerge.*

GLOBAL WARMING IS *NOT* HAPPENING

by Christopher Monckton | February 21, 2009

The “global warming apocalypse” scare has the potential greatly to enrich scientists, academics, industrialists, and politicians willing to take unscrupulous advantage of it. However, we should do some due diligence before we join in reaping the considerable but short-lived rewards available to those who parrot the scientifically-baseless orthodoxy.

We begin with two graphs from the *Monthly CO2 Report*¹ (SPPI, 2009). First, on all measures, global temperatures for the past seven years have been falling (though the fall was largely unreported) at a rate equivalent to >2 Celsius degrees/century.



This seven-year decline in global temperatures is of great significance, for the IPCC's current methodology cannot explain it.

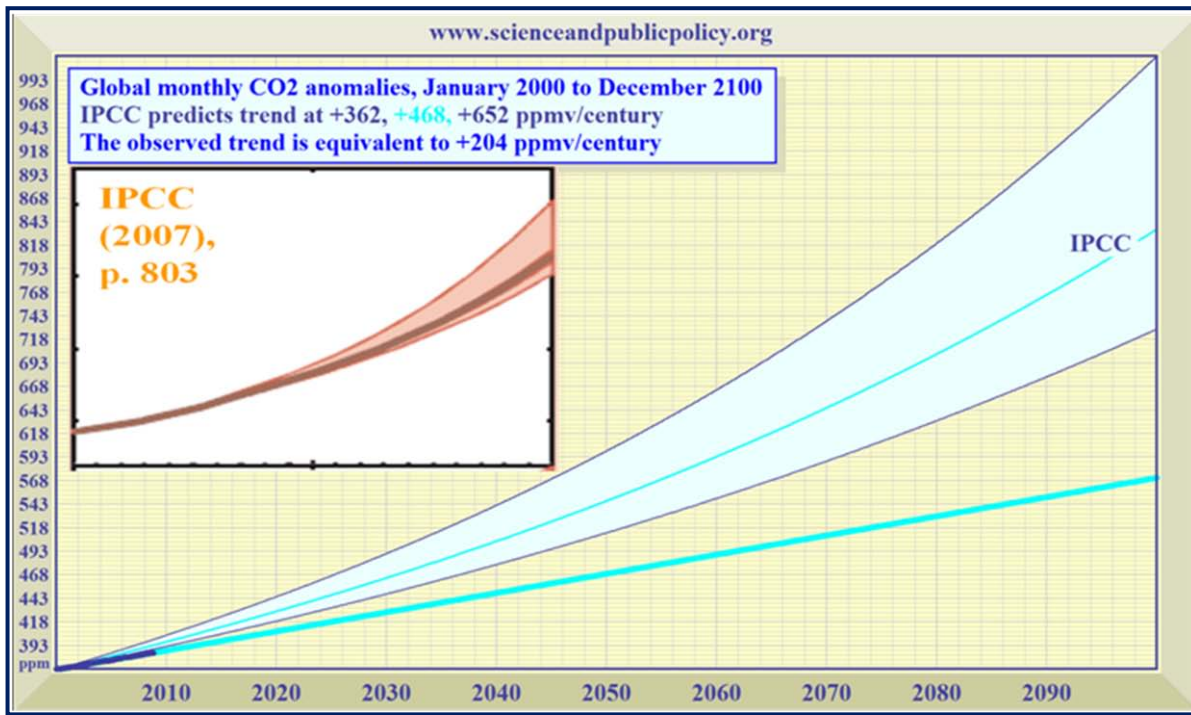
Seven years' global cooling: The arithmetic mean of the Hadley and NCDC monthly terrestrial global-temperature datasets and the RSS and UAH satellite lower-troposphere datasets shows a (largely-unreported) cooling for seven years at a rate equivalent to 2.1 C°/century. The pink region shows the IPCC's projected range of warming rates: the pale pink region is 1 standard deviation either side of the IPCC's central estimate that global temperature will rise 3.9 C° to 2100.

This seven-year decline in global temperatures is of great significance, for the IPCC's current methodology cannot explain it. Throughout the period, CO2 concentration has risen, and the IPCC quantifies the contribution of natural forcings such as that from the sun as being minuscule. Warming should have resulted.

Our second graph shows that the observed increase in atmospheric CO2 concentration is well below the IPCC's predicted range of increases.

¹ http://scienceandpublicpolicy.org/monthly_report/jan_co2_report.html.

It is important to draw the distinction between the increase in CO₂ *emission*, which has been at the high end of the IPCC's projections, and the corresponding increase in CO₂ *concentration*, which has recently been very near linear, and is running well below the least of the exponential rates of increase projected by the IPCC.



Observed and predicted CO₂ concentration, 2000-2100: The pale-blue region, bounded by exponential curves, is the IPCC's predicted path for CO₂ concentration. The observed, deseasonalized data from January 2000 to November 2008 (dark blue) is near-coincident with the least-squares linear-regression trend, (solid, light-blue line). The predictive region emulates the IPCC's graph for scenario A2 [inset]. **Sources:** NOAA; [inset] IPCC (2007), p.803, after aspect-ratio adjustment.

There is compelling evidence that much of the warming of the past half-century was caused by an exceptional increase in solar activity.

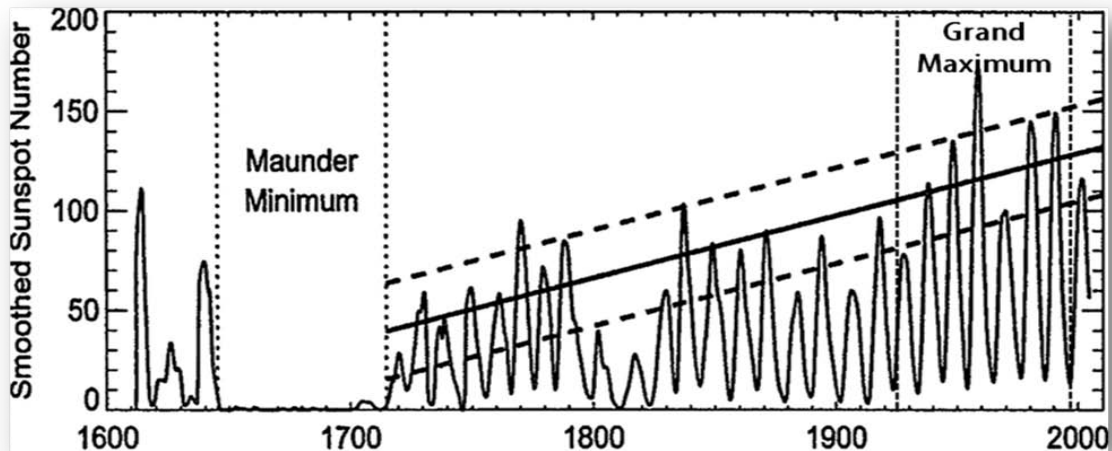
On the current, linear observed trend, CO₂ concentration in 2100 will be just 575 ppmv (IPCC central estimate 836 ppmv), requiring the IPCC's central projection of temperature increase to 2100 to be halved from 3.9 to a harmless 1.9 C°.

The IPCC's prediction of Co₂ increase is greatly exaggerated, chiefly because the IPCC cannot add up the global "carbon budget" to within a factor of two. According to its metric, CO₂ emissions at their current record levels ought to be adding some 4.1 ppmv/year to the atmosphere, yet the actual increase is only 2 ppmv/year. Ever since CO₂ concentration has been measured by modern methods, the increase in concentration has run below half the expected rate.

Nevertheless, the IPCC tries implausibly to claim 90% certainty that more than half of the warming of the past half-century is anthropogenic. It was the political representatives, not the scientists, who reached this conclusion by show of hands – an

intriguing instance of the *argumentum ad populum*, an Aristotelian fallacy that has no place in serious thought. Science is not a democracy.

There is compelling evidence that much of the warming of the past half-century was caused by an exceptional increase in solar activity. During the 70 years 1645-1715, the Maunder Minimum, the Sun was less active than in 10,000 years. Then solar activity inexorably increased for almost 300 years until, during the 70 years 1925-1995, peaking in 1960, the Solar Grand Maximum, the Sun was at least as active as at any time in the previous 11,400 years (Solanki *et al.*, 2005). Hathaway *et al.* (2004) illustrate this solar increase by reference to the 11-year cycles of sunspot numbers –



300 years' growth in solar activity: Smoothed sunspot numbers, showing the Sun's 11-year cycles, reveal the increase in solar activity between the Maunder Minimum and the recent (though largely unreported) solar Grand Maximum. **Source:** Hathaway *et al.* (2004) (indication of Grand Maximum added by the author).

This exceptional increase in solar activity from Maunder Minimum to Grand Maximum has led solar physicists to accord a far greater role to the Sun than the IPCC finds it expedient to allow.

The 2004 Symposium of the International Astronomical Union concluded that the Sun had been responsible for the warming of the past 250 years; that solar activity was now likely to decline; and that global cooling, not warming, was likely.

In the four years since then:

- Solar activity has declined sharply;
- Magnetic convection currents beneath the surface of both solar hemispheres have slowed to a rate never before observed;
- 266 days without sunspots occurred in 2008, the second-least solar activity in more than a century; and
- Global temperatures have duly fallen at a rate equivalent to 6 C°/century.

If that cooling were to persist, there would be an Ice Age by 2100. Scafetta & West (2008) conclude that the Sun caused 69% of the global warming that ceased in 1998.

If that cooling were to persist, there would be an Ice Age by 2100.

The central question – on which there is no consensus – is how much warming a given proportionate increase in CO₂ concentration will cause. Arrhenius (1896) estimated 5 C° at CO₂ doubling; Hansen (1988) 4.2 C°; IPCC (1995) 3.8 C°; IPCC (2001) 3.5 C°; and IPCC (2007) 3.26 ± 0.69 C°.

At its very simplest, climate sensitivity to atmospheric enrichment with CO₂ is a logarithmic function of the proportionate increase in CO₂ concentration. The IPCC's current evaluation of this crucial climatic parameter is childishly *simpliste*: though 3.26 ± 0.69 C° sounds commendably precise, this value may be attained by the following startlingly naive method:

$$\begin{aligned} \Delta T_{S,2x} &= c \ln(C/C_0) \\ &= (4.7 \pm 1) \ln 2 \\ &= 3.26 \pm 0.69 \text{ C}^\circ. \end{aligned} \tag{1}$$

This result is said to be derived from a “multi-model mean”: however, it is – to say the least – suspicious that one obtains exactly one standard deviation above or below the central estimate simply by taking the coefficient $c = 4.7$ and adding or subtracting exactly unity. Plainly, further scrutiny is needed.

In the methodology of the IPCC, climate sensitivity – temperature response ΔT_S to an external perturbation such as anthropogenic greenhouse-gas enrichment – is the product of:

- Direct radiative forcings ΔF ;
- The zero-feedback climate-sensitivity parameter κ ; and
- Temperature feedbacks encompassed in the feedback multiplier f , such that:

$$f = (1 - b\kappa)^{-1}, \tag{2}$$

where b is the sum of all positive and negative temperature feedbacks, which are then mutually amplified via Eq. {2}, the Bode linear feedback-amplification equation.

Thus the climate-sensitivity equation is:

$$\Delta T_S = \Delta F \kappa f = \Delta F \kappa (1 - b\kappa)^{-1}. \tag{3}$$

None of the three key parameters ΔF , κ , f can be definitively evaluated by theoretical demonstration, directly measured by instrumentation, or reliably inferred by experimentation (Monckton, 2008).

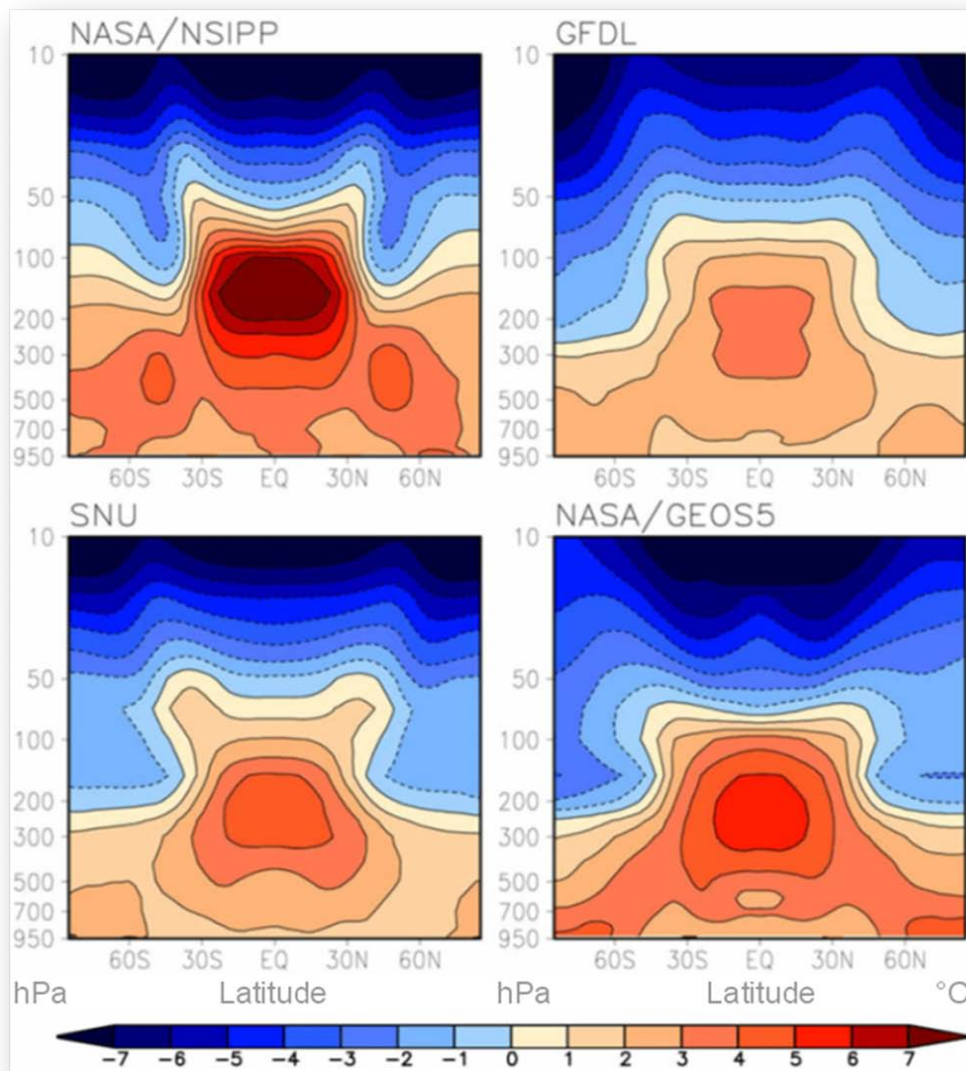
Official predictions of climate sensitivity, therefore, being reliant near-exclusively on numerical modeling, cannot be Popper-falsified. To this extent, the anthropogenic-

warming contention is untestable, does not qualify as a hypothesis and, *stricto sensu*, is not of interest to science.

However, we may enquire into the reasonableness of the IPCC's values for the three key parameters ΔF , κ , f , whose product is final climate sensitivity ΔT_s .

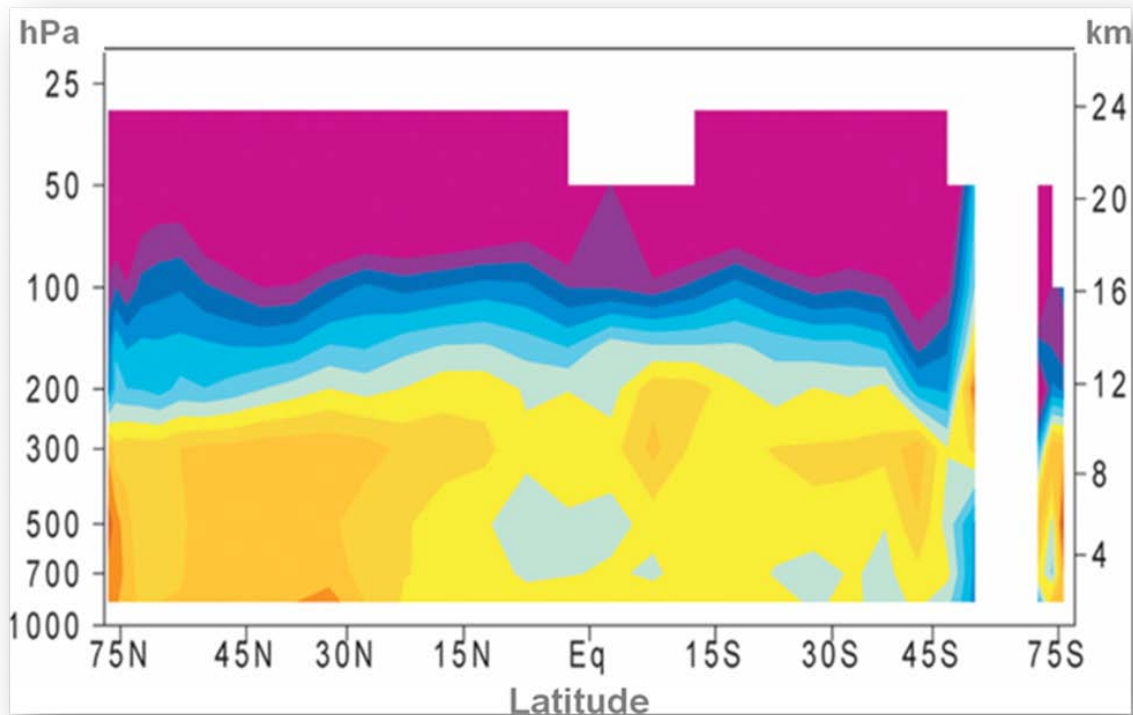
First, all of the models on which the IPCC relies predict that most of the atmospheric warming that arises from anthropogenic greenhouse-gas enrichment will occur in the tropical upper troposphere, where the warming rate will be 2-3 times that observed at the surface:

The anthropogenic-warming contention is untestable, does not qualify as a hypothesis and, stricto sensu, is not of interest to science.



Predicted “hot-spot”: Zonal mean equilibrium temperature change ($^{\circ}\text{C}$) at CO_2 doubling ($2\times \text{CO}_2$ – control), as a function of latitude and pressure (hPa) for 4 general-circulation models. All show the projected fingerprint of anthropogenic greenhouse-gas warming: the tropical mid-troposphere “hot-spot” is projected to warm at 2-3 times the surface rate. **Source:** Lee et al. (2007).

However, the tropical mid-troposphere “hot-spot” that is so confidently predicted by all of the models is not observed in reality:



No “hot-spot”: Altitude-vs.-latitude plot of observed relative warming rates in the satellite era. The greater rate of warming in the tropical mid-troposphere that is projected by general-circulation models is clearly absent in this and all other observational datasets, whether satellite or radiosonde. **Source:** Hadley Centre for Forecasting (HadAT, 2006).

Dr. Richard Lindzen, Alfred P. Sloan Professor of Meteorology at the Massachusetts Institute of Technology, the world’s ranking expert on the behaviour of the atmosphere, has concluded from the absence of the “hot-spot” that:

“... A doubling of CO₂ leads to surface warming of from about 1.5-3.5 K. By contrast, the observed warming over the past century or so amounts to only about 0.6-0.8 K (not all of which need be due to increased greenhouse gases). ... Using basic theory, modeling results and observations, we can reasonably bound the anthropogenic contributions to surface warming since 1979 to a third of the observed warming, leading to a climate sensitivity too small to offer any significant measure of alarm ...”

This result is very much in line with that of Scafetta & West (2008. *op. cit.*). It requires that we divide the IPCC’s imagined climate sensitivity to CO₂ by *at least* 3.

Furthermore, the IPCC also overstates the zero-feedback climate sensitivity parameter (the “Planck parameter”), whose value cannot exceed 0.27 K W⁻¹ m², taking 0.313 instead. This value is above any in the mainstream literature. It repeals the fundamental equation of radiative transfer, by taking temperature and radiant energy from different radiating surfaces.

Low climate sensitivity is to be expected, for CO2 is no more than a trace gas, occupying only 1 part in 10,000 more of the atmosphere than 250 years ago.

Also, the IPCC underestimates the cooling effect of evaporation in calculating the water-vapor feedback (Wentz *et al.*, 2007), and regards the cloud feedback as strongly positive when it should be net-negative (Spencer, 2007), consequently – and substantially – overvaluing the feedback multiplier.

Correcting for each of these exaggerations reduces climate sensitivity to <0.6 C° at CO2 doubling (Monckton, 2008; *cf.* Lindzen, 2008; Spencer *et al.*, 2007; Schwartz, 2007).

Low climate sensitivity is to be expected, for CO2 is no more than a trace gas, occupying only 1 part in 10,000 more of the atmosphere than 250 years ago. Its effect on temperature is logarithmic: each additional molecule causes less warming than its predecessors. Indeed, the IPCC's formula for evaluating the radiative forcing from CO2 ceases to apply once concentration reaches 915 ppmv, above which adding CO2 has very little effect on temperature. Half a billion years ago, there was 25 times as much CO2 in the atmosphere as today. The planet did not fry.

It is often said that the effect of the warming we are causing will be observed for millennia to come. This is not so. The IPCC's central estimate of the *equilibrium* increase in global temperature from 2000-2100 (on its "business-as-usual" Scenario A2) is:

$$\begin{aligned}\Delta T_{S,2x} &= 4.7 \ln (836/368) \\ &= 3.9 \text{ C}^\circ.\end{aligned}\quad \{4\}$$

Yet the IPCC's stated estimate of *transient* climate sensitivity by 2100, in Table SPM.3, is 3.4 C°. Accordingly, if CO2 concentration were to be stabilized by 2100, temperature would rise thereafter by no more than 0.5 C° – and only by that much on the probably-incorrect assumption that the IPCC's estimates of climate sensitivity to atmospheric CO2 enrichment have not been absurdly exaggerated.

There are two obvious and fatal omissions in the IPCC's analysis, without which its climate-sensitivity values cannot be seriously taken at face value. First, in 1600 pages the IPCC neglects to mention any of the laboratory experiments on the basis of which it wishes us to believe that CO2 will in future have an effect on temperature far larger than that which it is visibly exerting today, still less how such experiments can be reliably translated from the lab to the atmospheric column.

Half a billion years ago, there was 25 times as much CO2 in the atmosphere as today.

—◆—
The planet did not fry.

Secondly, the IPCC does not mention whether the outgoing longwave radiation from the Earth's surface, as measured by satellites, has declined as fast as its models have predicted. As Professor Lindzen has pointed out, it was established in several papers published decades ago that the observed decline in outgoing longwave radiation has been far less than predicted, confirming empirically that climate sensitivity to further

CO2 enrichment is small, and that the models – programmed to assume an excessive climate sensitivity – are indeed overegging the pudding.

Finally, what are the consequences of 300 years’ planetary warming, during all but the last 30 of which we cannot have been to blame for the warming?

First, as expected, there are more warm years at the end of the period than at the beginning. This is often cited as a reason to believe that anthropogenic “global warming” is occurring: however, it is merely a reason to believe that warming (of whatever origin) has been occurring.

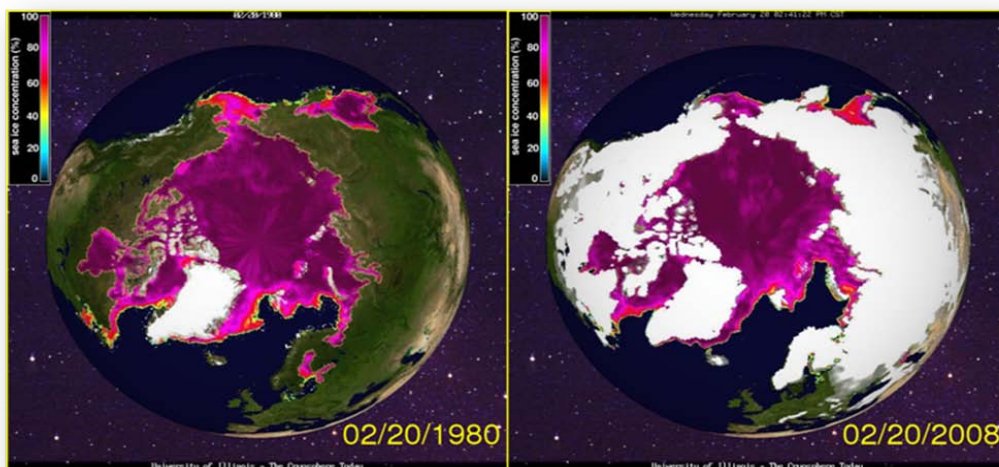
Secondly, sea level is rising at ~1 ft/century, compared with a mean centennial rate of rise of 4ft/century over the past 10,000 years. There is little sign of acceleration in this rate, and no evidence that sea level will imminently rise by 20 ft, as imagined by Al Gore. The UK High Court has bluntly commented: “The Armageddon scenario that he

Landfalling Atlantic hurricanes show no trend in 100 years, and severe typhoons and tropical storms have been in decline for 30 years.

depicts is not based on any scientific view” (Dimmock v. S of S Educ., 2007). *A fortiori*, a recent statement by a NASA researcher that sea level will rise by almost 250 feet is mere rodomontade. The oceans have been cooling since 2003, when 3175 automated bathythermographs were deployed to provide the first reliable measurements of ocean temperature.

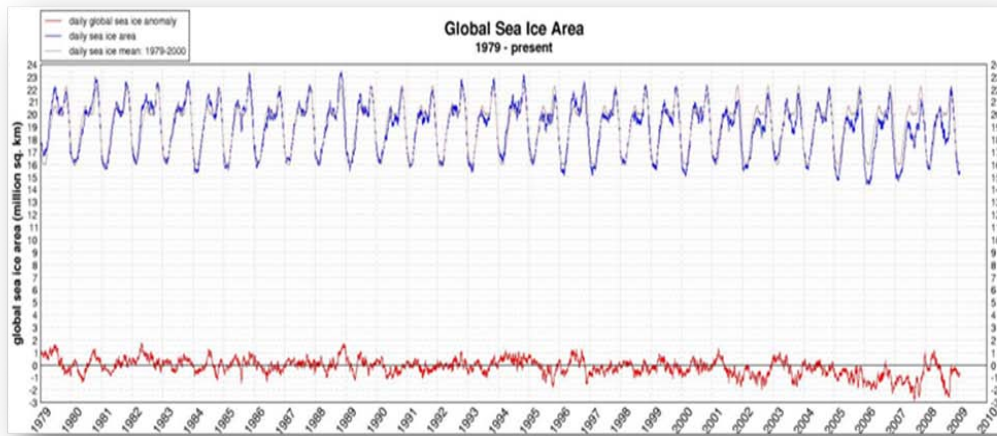
Thirdly, landfalling Atlantic hurricanes show no trend in 100 years, and severe typhoons and tropical storms have been in decline for 30 years. Losses from hurricane damage, adjusted for inflation, population changes and changes in the built environment in harm’s way, have declined. Extra-tropical storms, expected to decrease in both frequency and intensity as warmer weather reduces temperature extremes, have indeed decreased.

Sea ice in the Arctic has been melting a little, particularly in the summer, but its winter extent (purple in the chart below) is much as it was 30 years ago when the satellites first looked. Note that more recent data are not available because the sensor has degraded:



The changes in Arctic sea ice are well within natural variability over the period. The Arctic was in fact warmer in the late 1930s and early 1940s than it is at present.

Sea ice in the Antarctic reached a record high (but largely-unreported) extent in October 2007. Globally, sea-ice extent shows little trend in 30 years:



Sea ice in the Antarctic reached a record high (but largely-unreported) extent in October 2007.

Land ice in Antarctica (90% of the world's total) and in Greenland (5%) has been accumulating throughout the period (Doran *et al.*, 2002; Johannesen *et al.*, 2005). Mountain glaciers had begun to decline in 1820-1800: there has been no increase in the rate of decline during the past 30 years, when we might have had some influence. Kilimanjaro's glacier has ablated owing to regional cooling and consequent desiccation of the atmosphere: the temperature at the summit has never risen above -1.6 degrees Celsius in 30 years of satellite observation, and the mean is -7 Celsius.

Northern-hemisphere snow cover, on which 40% of the world's population depends for its water supply, reached a record high extent in 2007/8 and shows no trend in 30 years.

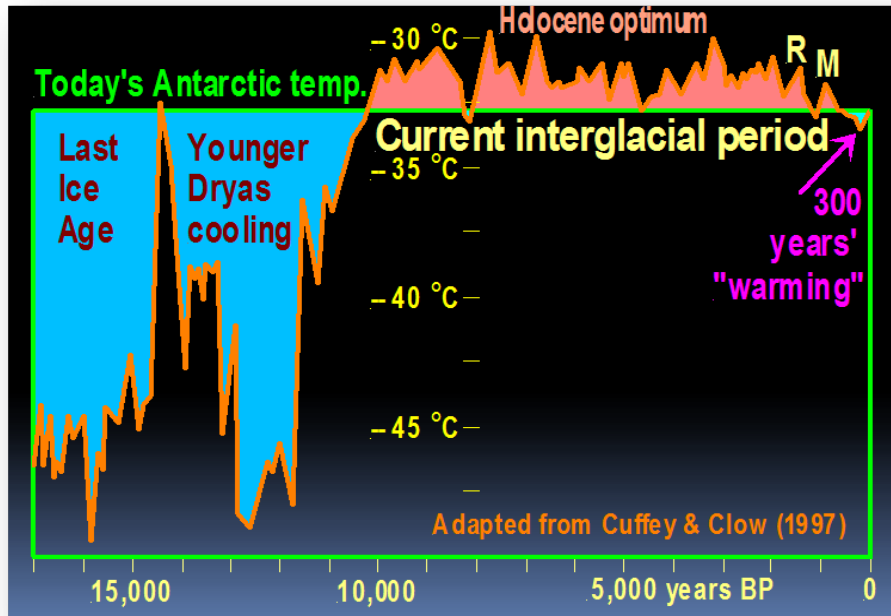
Patterns of heatwave, cold snap, drought, and flood continue to change, as they always have. There is no evidence for worsening extremes: the drought of the early 20th century in the American Great Plains, for instance, was far worse than anything seen since, and the incidence of major flooding in the UK from mediaeval times (when the whole of the city of Derby was flooded) via the 18th century (when the entire county of Norfolk was underwater for six months) to the present shows no trend.

Northern-hemisphere snow cover, on which 40% of the world's population depends for its water supply, reached a record high extent in 2007/8 and shows no trend in 30 years.

Though some extravagant claims for widespread species loss have been made, most of the world's life-forms thrive in the tropics, not at the Poles. Warmer weather will lead to speciation, not extinction. The warming of the 20th century, like that of the 19th and 18th centuries, was around 0.75 C^o: not enough to cause harm. In Central England, in just one-third of a century between 1700 and 1735, temperatures rose by 2.2 Celsius degrees, equivalent to a centennial rate nearly nine times that which was observed globally in the 20th century. There is little

reason to suppose that the warming of the present century (if and when it begins) will be any more severe than that of the 20th century.

Putting today's "global warming" in perspective, global temperatures were 7 C° warmer than the present throughout most of the past half-billion years; 5 C° warmer in each of the past four interglacial periods; 2-3 C° warmer throughout most of the past 10,000 years; and, notwithstanding a clumsy and now-discredited attempt by the IPCC to abolish it, 1-3 C° warmer during the medieval (M) warm period:



We conclude that catastrophic "global warming" is a fantasy; and that the warming from CO₂ enrichment will be small, harmless, and beneficial.

Even if temperature had risen above natural variability, the recent solar Grand Maximum may have been chiefly responsible. Even if the sun were not chiefly to blame for the past half-century's warming, the IPCC has not demonstrated that CO₂ has contributed more than a small fraction of the warming.

Even if CO₂ were chiefly responsible for the warming that ceased in 1998 and may not resume until 2015 (Keenlyside *et al.*, 2008), the distinctive, projected fingerprint of anthropogenic "greenhouse-gas" warming is entirely absent from the observed record.

Even if the fingerprint were present, computer models are long proven (Lorenz, 1963) to be inherently incapable of providing projections of the future state of the climate that are sound enough for policymaking. Even if *per impossibile* the models

We conclude that catastrophic "global warming" is a fantasy; and that the warming from CO₂ enrichment will be small, harmless, and beneficial.

could ever become reliable, it is evident that the world will not – indeed, cannot – warm as much as the IPCC imagines as a result of atmospheric greenhouse-gas enrichment.

Even if the world were to warm that much, the overwhelming majority of the scientific, peer-reviewed literature does not predict that catastrophe would ensue (Schulte, 2008). Even if catastrophe might ensue, proposals to mitigate future climate change by reducing emissions of carbon dioxide would make very little difference to the climate.

Even if mitigation were likely to be effective, it would do more harm than good: already millions face starvation as the environmentally-disastrous dash for biofuels takes agricultural land out of essential food production, a warning that taking precautions, “just in case”, can do untold harm unless there is a sound, scientific basis for them.

Finally, even if mitigation might do more good than harm, adaptation when (and if) necessary would be far more cost-effective and far less likely to be harmful.

There is no case for spending a single penny more of taxpayers’ money on “global warming” unless and until mean global surface temperatures shall have risen by at least 1 C° above the year 2000. On current evidence and trends, that will not happen for at least a century, if then. This is a scare that has been oversold for political reasons. It is time for a calmer, more science-based approach.

III. Politics

CLIMATOLOGY VERSUS CLIMATISM

by Vinod K. Dar | July 24, 2008

"... the End of the world is already near ... As this same End of the world is drawing nigh , many unusual things will happen – climatic changes, terrors from heaven, unseasonable tempests, wars, famines, pestilences and earthquakes."

- The quotation is from a letter sent by a very famous and influential man to a European head of state. Its author is disclosed at the end of this essay.

Climatology is a science. Climatism is an ideology. Climatologists are scientists. Climatists are social or political organizers who abuse climatology in the service of ideologues. Climatology was and still is an investigation of nature. Climatism is the exploitation of the fear of nature to gain power, wealth and social esteem.

Once, learned discussions about the climate, if not tomorrow's weather, were confined to climatologists. Today, public discussion about the climate in the Western media is dominated, maybe monopolized by climatists. The typical American, Canadian, European, Japanese, or Australian is exposed to climatism daily but hardly ever to climatology. Climatism is a Western ideology that has, generally, failed to expand its ambit of influence beyond rich people in rich countries.

Climatism has the solution: Ruthless carbon suppression via total control of human society, globally.

Climatism asserts that severe or catastrophic changes in the climate are ahead (but not just yet). The primary strain of climatism and the one known to the general public is that the earth is warming rapidly (Climatism W). This is a terrible thing. Human beings acting according to their nature i.e engaging in human activity are responsible. However, climatism has the solution: ruthless carbon suppression via total control of human society, globally. The secondary strain but one unknown to the public is that the earth is getting ready to cool dramatically (Climatism C). This is a terrible but entirely natural thing. Human beings have nothing to do with it and there will be few left anyway, assuming they follow some survival prescriptions, to worry about such things.

As CS Lewis wrote about the historicism and scientism plaguing his own generation these 'isms' are "the sweet poison of the false infinitive." His contemporary, Ronald Knox, pondering the same 'isms' wrote "The world's future occupied their thoughts instead of a future world, and, by a kind of inverted Confucianism they fell to worshipping their grandchildren." To both Lewis and Knox the 'isms' tempt people to live in the future, instead of the present which is our reality, because the future engenders both fear and hope ,which can be exploited.

Climatists take a small, verifiable, truth and expand it to cover an enormous sphere of nature and human activity. They invoke the authority of science and the mystery of scientific nomenclature to bludgeon the public. Climatists are always certain. Climatologists readily admit their uncertainty. Climatists force fit every event, observation or trend no matter how contradictory or palpably irrelevant to "prove" their superiority: from penguins to polar bears, to deluges and droughts, changing deserts and rainforests, expanding and retreating glaciers, thickening and thinning ice sheets, coral reefs and noctilucent clouds(clouds high above the surface of the earth made of chemical ice that shine like brilliant gems at night), volcanoes and typhoons, solar wind and water vapor, and of course, very small changes in the carbon dioxide composition of the atmosphere. Climatologists concede there is much they cannot fit or explain, much less predict.

Climatists are always certain. Climatologists readily admit their uncertainty. Climatists force fit every event, observation or trend no matter how contradictory or palpably irrelevant to "prove" their superiority.

Climatism W has, until recently, succeeded in capturing the political imagination of the West and international bureaucrats paid and flattered by the West and the full range of the energy and environmental agenda in the West. It has failed to do so in the rest of the world, particularly the Global South. In the public climate discussion climatologists have been the silent majority.

This appears to be changing as more climate scientists in both the West and the rest of the world (especially Russia and India) challenge Climatism W. While politically Climatism W remains potent it may have peaked this year and possibly is waning. In the Global South it has been defeated as an ideology though still regnant as a convenient slogan. In the West its actionable victories have so far been minor although much trumpeted. Time is no longer on the side of Climatism W. It must either succeed in the next 2 years or not at all. Since Climatism C is not a political program its ideological success or failure is of no political or public policy consequence.

Why Has Climatism W Dominated The Public Conversation?

Climatism W has a tremendous advantage: it has learned very well the insights of the various collectivist and materialist 'isms' of the 20th Century: scientific reductionism, communism, fascism, socialism and indeed even racism. It has absorbed and expertly applied the insights to the circumstances of the early 21st Century and displayed mastery of propaganda and mass political communications. Climatism W's program is simple and effective: first exploit a deep fear among the general public. If the fear is not initially prevalent, then manufacture it since, in the 21st Century, urban Western civilization is far more impressed with manufactured or synthetic reality than with truth. Second, offer to take away this fear in return for great power, money and stature.

As the prospects for successfully implementing the program diminish, vast temper tantrums, fantastic accusations and staggering lies will be deployed to intimidate voters and politicians into submission. Screaming often works.

The 20th Century 'isms' realized that there were four ways for people to know things: by reasoning, by experience, by revelation and by authority. If reasoning, experience and revelation can be eliminated or discredited as channels then only authority remains and authority can be seized via assertion, repetition and bullying.

The lay person cannot reason about the global climate. The time, effort and intellectual preparation are simply not available to 99% of the population. Reason, as a source of knowledge is eliminated. Modern urban Western people have no experience of nature as a diversified, cyclical, hierarchical whole. The modern Western man or woman has no ability to "read" nature and nature's many signs and indicators and connections. People cannot directly experience the signals nature provides about whether the global climate is warming, cooling or varying gently and rhythmically. Experience is eliminated as a source of knowledge. Revelation is just available to the materialistic and reductionist mind of the 21st Century Western man or woman.

This leaves authority as the sole source of knowledge. Authority, for many in the West, resides in black boxes that are opaque, complicated, mathematical models which purport to yield information about the future. The outputs of these models, which are pervasive, are used almost daily by most people.

These are quantitative models about next week's weather; the stock, credit, commodities and housing markets; the economy, population, crime, politics, cities, diseases, games, the cosmos; in fact, anything one is remotely interested in. Models are the manufactured reality of our age. They are the goat entrails of the 21st Century. Just as selecting the right goat to kill and reading the entrails was the province of the highly select and self anointed, so too with models. People obsessively want to know the future and models are the channels to next month, next year, the next decade and indeed the next three to four decades.

Western society and societies that ape Western sophistication and sophistry are perhaps the most credulous in human history. Many of us will believe practically anything somebody with assurance says if they flourish a mathematical model, inaccessible data, and can cite ten other people as validating sources. Naturally, the model makers and keepers are vested with awesome authority. Climatists W claim to have the models that portend terrifying consequences from global warming caused by human activity. Fear of the climate, has for many people in the West, become the abiding fear of our time.

Terrors go away when people confront them or if, after repeated predictions of imminent doom, the end does not come. It is the task of climatologists and interested lay people to confront the terror long enough and expose the expression "Carbon

Climatism W's program is simple and effective: first exploit a deep fear among the general public. If the fear is not initially prevalent, then manufacture it since, in the 21st Century, urban Western civilization is far more impressed with manufactured or synthetic reality than with truth. Second, offer to take away this fear in return for great power, money and stature.

control now" as grammatolatry so that Climatism W's predictions fail. Then, Climatism W will be defeated. Otherwise it will win.

The quotation at the beginning of this essay was taken from a letter by Pope Gregory the Great to Ethelbert, King of the Angles (June 601). Gregory was one of the most talented, learned and accomplished men of the Middle Ages. If even one as able as he could be wrong, then why should we believe any climatist today?

Source: [Right Side News](#)

<http://www.rightsidenews.com/200807231515/energy-and-nvironment/climatology-versus-climatism.html>

Vinod K. Dar writes for Right Side News and is an energy industry professional and has published articles for electric and gas industry journals and trade press for more than 25 years. He is the Managing Director of [DAR & COMPANY](#), founded in 1990. He has operating experience in gas and electric trading, marketing, retailing and merchant generation, and has been CEO of two energy trading and marketing companies. Mr. Dar has served on the Boards of five publicly traded energy and consulting firms. <http://www.darandcompany.com/>.

I AM AN INTELLECTUAL BLASPHEMER

by Alexander Cockburn | January 25, 2008

While the world's climate is on a warming trend, there is zero evidence that the rise in CO2 levels has anthropogenic origins. For daring to say this I have been treated as if I have committed intellectual blasphemy.

In magazine articles and essays I have described in fairly considerable detail, with input from the scientist Martin Hertzberg, that you can account for the current warming by a number of well-known factors - to do with the elliptical course of the Earth in its relationship to the sun, the axis of the Earth in the current period, and possibly the influence of solar flares. There have been similar warming cycles in the past, such as the medieval warming period, when the warming levels were considerably higher than they are now.

Yet from left to right, the warming that is occurring today is taken as being man-made, and many have made it into the central plank of their political campaigns.

This turn to climate catastrophism is tied into the decline of the left, and the decline of the left's optimistic vision of altering the economic nature of things through a political programme. The left has bought into environmental catastrophism because it thinks that if it can persuade the world that there is indeed a catastrophe, then somehow the emergency response will lead to positive developments in terms of social and environmental justice.

Yet from left to right, the warming that is occurring today is taken as being man-made, and many have made it into the central plank of their political campaigns. For reasons I find very hard to fathom, the environmental left movement has bought very heavily into the fantasy about anthropogenic global warming and the fantasy that humans can prevent or turn back the warming cycle.

This turn to climate catastrophism is tied into the decline of the left, and the decline of the left's optimistic vision of altering the economic nature of things through a political programme. The left has bought into environmental catastrophism because it thinks that if it can persuade the world that there is indeed a catastrophe, then somehow the emergency response will lead to positive developments in terms of social and environmental justice.

This is a fantasy. In truth, environmental catastrophism will, in fact it already has, play into the hands of sinister-as-always corporate interests. The nuclear industry is benefiting immeasurably from the current catastrophism. Last year, for example, the American nuclear regulatory commission speeded up its process of licensing; there is an imminent wave of nuclear plant building. Many in the nuclear industry see in the story about CO2 causing climate change an opportunity to recover from the adverse publicity of Chernobyl.

More generally, climate catastrophism is leading to a re-emphasis of the powers of the advanced industrial world, through its various trade mechanisms, to penalise Third World countries. For example, the Indians have just produced an extremely cheap car called the Tata Nano, which will enable poorer Indians to get about more easily without having to load their entire family on to a bicycle. Greens have already attacked the car, and it won't take long for the WTO and the advanced powers to start punishing India with a lot of missionary-style nonsense about its carbon emissions and so on.

More generally, climate catastrophism is leading to a re-emphasis of the powers of the advanced industrial world, through its various trade mechanisms, to penalise Third World countries.

Here in the West, the so-called 'war on global warming' is reminiscent of medieval madness.

The politics of climate change also has potential impacts on farmers. Third World farmers who don't use seed strains or agricultural procedures that are sanctioned by the international AG corporations and major multilateral institutions and banks controlled by the Western powers will be sabotaged by attacks on their 'excessive carbon footprint'. The environmental catastrophism peddled by many who claim to be progressive is strengthening the hand of corporate interests over ordinary people.

Here in the West, the so-called 'war on global warming' is reminiscent of medieval madness. You can now buy Indulgences to offset your carbon guilt. If you fly, you give an extra 10 quid to British Airways; BA hands it on to some non-profit carbon-offsetting company which sticks the money in its pocket and goes off for lunch. This kind of behaviour is demented.

What is sinister about environmental catastrophism is that it diverts attention from hundreds and hundreds of serious environmental concerns that can be dealt with - starting, perhaps, with the emission of nitrous oxides from power plants. Here, in California, if you drive upstate you can see the pollution all up the Central Valley from Los Angeles, a lot of it caused, ironically, by the sulphuric acid droplets from catalytic converters! The problem is that 20 or 30 years ago, the politicians didn't want to take on the power companies, so they fixed their sights on penalising motorists who are less able to fight back. Decade after decade, power plants have been given a pass on the emissions from their smoke stacks while measures to force citizens to change their behaviour are brought in.

What is sinister about environmental catastrophism is that it diverts attention from hundreds and hundreds of serious environmental concerns that can be dealt with.

Emissions from power plants are something that could be dealt with now. You don't need to have a world programme called 'Kyoto' to fix something like that. The Kyoto Accord must be one of the most reactionary political manifestos in the history of the world; it represents a horrible privileging of the advanced industrial powers over developing nations.

The marriage of environmental catastrophism and corporate interests is best captured in the figure of Al Gore.

The marriage of environmental catastrophism and corporate interests is best captured in the figure of Al Gore. As a politician, he came to public light as a shill for two immense power schemes in the state of Tennessee: the Tennessee Valley Authority and the Oak Ridge Nuclear Laboratory. Gore is not, as he claims, a non-partisan green; he is influenced very much by his background. His arguments, many of which are based on grotesque science and shrill predictions, seem to me to be part of a political and corporate outlook.

In today's political climate, it has become fairly dangerous for a young scientist or professor to step up and say: 'This is all nonsense.' It is increasingly difficult to challenge the global warming consensus, on either a scientific or a political level. Academies can be incredibly cowardly institutions, and if one of their employees was to question the discussion of climate change he or she would be pulled to one side and told: 'You're threatening our funding and reputation - do you really want to do that?' I don't think we should underestimate the impact that kind of informal pressure can have on people's willingness to think thoroughly and speak openly.

In today's political climate, it has become fairly dangerous for a young scientist or professor to step up and say: 'This is all nonsense.'

One way in which critics are silenced is through the accusation that they are ignoring 'peer-reviewed science'. Yet oftentimes, peer review is a nonsense. As anyone who has ever put his nose inside a university will know, peer review is usually a mode of excluding the unexpected, the unpredictable and the unrespectable, and forming a mutually back-scratching circle.

One way in which critics are silenced is through the accusation that they are ignoring 'peer-reviewed science'. Yet oftentimes, peer review is a nonsense. As anyone who has ever put his nose inside a university will know, peer review is usually a mode of excluding the unexpected, the unpredictable and the unrespectable, and forming a mutually back-scratching circle. The history of peer review and how it developed is not a pretty sight. Through the process of peer review, of certain papers being nodded through by experts and other papers being given a red cross, the controllers of the major scientific journals can include what they like and exclude what they don't like. Peer review is frequently a way of controlling debate, even curtailing it. Many people who fall back on peer-reviewed science seem afraid to have out the *intellectual* argument.

Since I started writing essays challenging the global warming consensus, and seeking to put forward critical alternative arguments, I have felt almost witch-hunted. There has been a hysterical reaction. One individual, who was once on the board of the Sierra Club, has suggested I should be criminally prosecuted. I wrote a series of articles on climate change issues for the *Nation*, which elicited a level of hysterical outrage and affront that I found to be astounding - and I have a fairly thick skin, having been in the business of making unpopular arguments for many, many years.

Many people who fall back on peer-reviewed science seem afraid to have out the intellectual argument.

There was a shocking intensity to their self-righteous fury, as if I had transgressed a moral as well as an intellectual boundary and committed blasphemy. I sometimes think to myself, 'Boy, I'm glad I didn't live in the 1450s', because I would be out in the main square with a pile of wood around

my ankles. I really feel that; it is remarkable how quickly the hysterical reaction takes hold and rains down upon those who question the consensus.

This experience has given me an understanding of what it must have been like in darker periods to be accused of being a blasphemer; of the summary and unpleasant consequences that can bring. There is a witch-hunting element in climate catastrophism. That is clear in the use of the word 'denier' to label those who question claims about anthropogenic climate change. 'Climate change denier' is, of course, meant to evoke the figure of the Holocaust denier. This was contrived to demonise sceptics. The past few years show clearly how mass moral panics and intellectual panics become engendered.

There is a witch-hunting element in climate catastrophism.

Alarmism about population explosion is being revisited through the climate issue.

In my forthcoming book, *A Short History of Fear*, I explore the link between fearmongering and climate catastrophism. For example, alarmism about population explosion is being revisited through the climate issue. Population alarmism goes back as far as Malthus, of course; and in the environmental movement there has always been a very sinister strain of Malthusianism. This is particularly the case in the US where there has never been as great a socialist challenge as there was in Europe. I suspect, however, that even in Europe, what remains of socialism has itself turned into a degraded Malthusian outlook. It seems clear to me that climate catastrophism represents a new form of the politics of fear.

I think people have had enough of peer-reviewed science and experts telling them what they can and cannot think and say about climate change. Climate catastrophism, the impact it is having on people's lives and on debate, can only really be challenged through rigorous open discussion and through a "battle of ideas."

I think people have had enough of peer-reviewed science and experts telling them what they can and cannot think and say about climate change.

Source: http://www.spikedonline.com/index.php?/site/reviewofbooks_article/4357/.

AL GORE'S PROPAGANDA

by Roy W. Spencer, Ph. D. | January 27, 2009

Mr. Gore's tactics have been a little more subtle, and reminiscent of propaganda methods which have proved to be effective throughout history at influencing public opinion. One should keep in mind that his main scientific adviser, NASA's James Hansen, has the most extreme views of any climate researcher when it comes to predicting a global warming induced Armageddon.

Listed below are ten propaganda techniques I have excerpted from Wikipedia. Beneath each are one or more examples of Mr. Gore's rhetoric as he has attempted to goad the rest of us into reducing our CO₂ emissions. Except where indicated, most quotes are from his testimony before the U.S. Senate Environment and Public Works Committee, March 21, 2007. (Mr. Gore is scheduled to testify again tomorrow, January 28, 2009, before the Senate's Foreign Relations Committee ... if the cold and snowy weather doesn't cause them to reschedule.)

Appeal to Fear: Appeals to fear seek to build support by instilling anxieties and panic in the general population.

"I want to testify today about what I believe is a planetary emergency – a crisis that threatens the survival of our civilization and the habitability of the Earth."

Appeal to Authority: Appeals to authority cite prominent figures to support a position, idea, argument, or course of action. Also, Testimonial. Testimonials are quotations, in or out of context, especially cited to support or reject a given policy, action, program, or personality. The reputation or the role (expert, respected public figure, etc.) of the individual giving the statement is exploited.

"Just six weeks ago, the scientific community, in its strongest statement to date, confirmed that the evidence of warming is unequivocal. Global warming is real and human activity is the main cause."

"The scientists are virtually screaming from the rooftops now. The debate is over! There's no longer any debate in the scientific community about this."

— [From *An Inconvenient Truth*.]

Bandwagon: Bandwagon and “inevitable-victory” appeals attempt to persuade the target audience to join in and take the course of action that “everyone else is taking”. Also, Join the crowd: This technique reinforces people’s natural desire to be on the winning side. This technique is used to convince the audience that a program is an expression of an irresistible mass movement and that it is in their best interest to join.

“Today, I am here to deliver more than a half million messages to Congress asking for real action on global warming. More than 420 Mayors have now adopted Kyoto-style commitments in their cities and have urged strong federal action. The evangelical and faith communities have begun to take the lead, calling for measures to protect God’s creation. The State of California, under a Republican Governor and a Democratic legislature, passed strong, economy wide legislation mandating cuts in carbon dioxide. Twenty-two states and the District of Columbia have passed renewable energy standards for the electricity sector.”

Flag-Waving: An attempt to justify an action on the grounds that doing so will make one more patriotic, or in some way benefit a group, country, or idea. Also, Inevitable victory: invites those not already on the bandwagon to join those already on the road to certain victory. Those already or at least partially on the bandwagon are reassured that staying aboard is their best course of action.

“After all, we have taken on problems of this scope before. When England and then America and our allies rose to meet the threat of global Fascism, together we won two wars simultaneously in Europe and the Pacific.”

Ad Hominem Attacks: A Latin phrase which has come to mean attacking your opponent, as opposed to attacking their arguments. Also Demonizing the “enemy”: Making individuals from the opposing nation, from a different ethnic group, or those who support the opposing viewpoint appear to be subhuman.

“You know, 15 percent of people believe the moon landing was staged on some movie lot and a somewhat smaller number still believe the Earth is flat. They get together on Saturday night and party with the global-warming deniers.”

— [October 24, 2006, Seattle University.]

Appeal to Prejudice: Using loaded or emotive terms to attach value or moral goodness to believing the proposition.

“And to solve this crisis we can develop a shared sense of moral purpose.”

— [June 21, 2006, London, England.]

Black-and-White Fallacy: Presenting only two choices, with the product or idea being propagated as the better choice.

“It is not a question of left vs. right; it is a question of right vs. wrong.”

— [July 1, 2007, New York Times op-ed.]

Euphoria: The use of an event that generates euphoria or happiness, or using an appealing event to boost morale:

Live Earth concerts organized worldwide in 2007 by Al Gore.

Falsifying Information: The creation or deletion of information from public records, in the purpose of making a false record of an event or the actions of a person or organization. Pseudo-sciences are often used to falsify information.

“Nobody is interested in solutions if they don’t think there’s a problem. Given that starting point, I believe it is appropriate to have an over-representation of factual presentations on how dangerous (global warming) is, as a predicate for opening up the audience to listen to what the solutions are, and how hopeful it is that we are going to solve this crisis.”

— [May 9, 2006 Grist interview.]

Stereotyping/Name Calling/Labeling: This technique attempts to arouse prejudices in an audience by labeling the object of the propaganda campaign as something the target audience fears, hates, loathes, or finds undesirable. Also, Obtain disapproval: This technique is used to persuade a target audience to disapprove of an action or idea by

suggesting that the idea is popular with groups hated, feared, or held in contempt by the target audience.

“There are many who still do not believe that global warming is a problem at all. And it’s no wonder: because they are the targets of a massive and well-organized campaign of disinformation lavishly funded by polluters who are determined to prevent any action to reduce the greenhouse gas emissions that cause global warming out of a fear that their profits might be affected if they had to stop dumping so much pollution into the atmosphere.”

— [January 15, 2004, New York City.]

Source: <http://www.drroyspencer.com/2009/01/al-gores-propaganda/>.

