

Launching the Counter-Offensive:
A Sensible Sense of Congress Resolution on Climate Change

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The Kyoto Climate Debate: Overview of the State of Play

Sen. John McCain (R-Ariz.) likens his push for another vote on the Climate Stewardship Act (S. 139), which the Senate rejected 55 to 43 in October of last year, to his seven-year crusade to limit campaign fundraising and political advertising: “It’s an old strategy of mine,” he said. “Force votes on the issues. Ultimately, we will win.”^[1] Or, ultimately, he will lose. But this much is undeniable: McCain, chief co-sponsor Sen. Joseph Lieberman (D-Conn.), and their advocacy group allies are on offense. They aggressively seek opportunities to publicize their message, expand their support base, and advance their agenda.

The same aggressive approach characterizes the climate alarmist camp generally. At home and abroad, in courts and legislatures, in the media and regulatory bodies, alarmists are on the attack:

- Environmental activist groups endlessly lambaste President Bush for “withdrawing” the United States from the Kyoto global warming treaty.^[2]
- The British Government’s Chief Scientific Advisor, Sir David King, in an attempt to influence U.S. policy, called climate change “the most severe problem that we are facing today—more serious even than the threat of terrorism.”^[3]
- European Union politicians relentlessly pressed Russian leaders to ratify the Kyoto Protocol.^[4]
- Twelve state attorneys general (AGs), 14 advocacy groups, and three cities are suing the U.S. Environmental Protection Agency (EPA) for rejecting a petition to regulate carbon dioxide (CO₂) emissions from motor vehicles.^[5]
- State legislators introduced at least 60 bills in 2004 proposing some form of CO₂ regulation.^[6]
- New York Governor George Pataki and nine other Northeastern governors plan to cap CO₂ emissions from their states’ electric power sector.^[7]
- Six New England governors formed a compact with five Eastern Canadian Premiers to reduce regional greenhouse gas emissions to 1990 levels by 2010 and 20 percent below 1990 levels by 2020.^[8]

¹ “McCain/Lieberman still fighting for climate amendment floor time,” *Energy & Environment Daily*, July 7, 2004.

² In reality, Bush did no such thing. The United States continues to send official representatives to the Kyoto negotiations, and the President has not renounced America’s signature on the treaty.

³ King, D. A. 2004. Climate Change Science: Adapt, Mitigate, Ignore? *Science* 303: 176-177.

⁴ Brian Stempeck, “Pressure to ratify Kyoto is ‘undeclared war against Russia,’ official says,” *Greenwire*, July 19, 2004.

⁵ Brian Stempeck, “Attorneys general outline argument in major CO₂ litigation,” *Greenwire*, June 23, 2004.

⁶ American Legislative Exchange Council, *Sons of Kyoto: 2004 Summary of Greenhouse Gas Legislation in the States*, June 2, 2004.

⁷ “States take independent action on clean air plans,” *Greenwire*, July 8, 2004.

⁸ New England Governors/Eastern Canadian Premiers, *Climate Change Action Plan 2001*, August 2001, <http://www.negc.org/documents/NEG-ECP%20CCAP.PDF>.

- The California Air Resources Board approved its plan to implement AB 1493, a state law mandating “maximum feasible” reductions of greenhouse gas emissions from new motor vehicles.^[9]
- The AGs of seven states plus the New York City corporation counsel are suing America’s five largest electric power producers to require each company to cap its CO₂ emissions and then reduce them by a specified percentage annually for at least a decade.^[10]
- The National Academy of Sciences published a study predicting apocalyptic climate impacts in California, such as an 8.3°C (14.1°F) increase in average summertime temperatures by 2100, unless urgent action is taken to reduce emissions.^[11] The NAS published the study even though its dire forecasts derive from discredited emissions scenarios^[12] and a climate model (the U.K. Met office Hadley Centre model) found to be incapable of replicating past U.S. temperature trends regardless of the averaging period used (five-year, 10-year, or 25-year).^[13]
- The Sydney Centre for International and Global Law published a report arguing that Australia has a legal obligation, under the 1972 World Heritage Convention, to ratify the Kyoto Protocol and, indeed, to cut greenhouse gas emissions by as much as 60 percent below 1990 levels by 2050.^[14]

Despite this surge of activism, alarmists have scored few if any victories at the national level:

- Senate leaders kept climate language out of the Senate energy bill.^[15]
- As already noted, the Senate rejected the McCain-Lieberman bill. Despite pro-Kyoto activists’ high-profile efforts to depict President Bush as an environmental criminal,^[16] the environment was not a key issue in the November 2004 elections, and the Senate lost four supporters of McCain-Lieberman—Tom Daschle (D-SD), John Edwards (D-NC), Bob Graham (D-Fla.), and Ernest Hollings (D-SC). In the House, legislation of the McCain-Lieberman variety has no chance of passing or even of coming to a vote.

⁹ California Air Resources Board, Climate Change, September 24, 2004,

<http://www.arb.ca.gov/regact/grnhsgas/grnhsgas.htm>.

¹⁰ Brian Stempeck, “States’ lawsuit demands utilities reduce CO₂ emissions 3 percent per year,” *Greenwire*, July 22, 2004.

¹¹ Hayhoe, K., *et al.* 2004. Emissions pathways, climate change, and impacts on California. *PNAS* vol. 101, no. 34: 12422-12427.

¹² See finding (17).

¹³ Testimony of Patrick Michaels, *The U.S. National Climate Change Assessment: Do the Climate Models Project a Useful Picture of Regional Climate?* House Energy and Commerce Subcommittee on Oversight and Investigations, July 25, 2002.

¹⁴ Sydney Centre for International and Global Law, *Global Climate Change and the Great Barrier Reef: Australia’s Obligations under the World Heritage Convention*, September 21, 2004, http://www.law.usyd.edu.au/scigl/SCIGLFinalReport21_09_04.pdf.

¹⁵ Darren Samuelsohn, “Domenici drops climate change title until floor debate,” *Energy & Environment Daily*, April 10, 2003.

¹⁶ Robert F. Kennedy, Jr., *Crimes Against Nature: How George W. Bush and his Corporate Pals Are Plundering the Country and Hijacking Democracy* (New York: HarperCollins, 2004).

- Kyoto remains in such disfavor with most Americans that the Democratic Party's 2004 platform—in sharp contrast to the party's 2000 platform—did not even mention the climate treaty negotiated by former standard-bearer Al Gore.
- The Bush Administration backed away from its proposal to award Kyoto-type emission credits to companies registering “voluntary” greenhouse gas emission reductions.^[17]
- When EPA rejected the petition to regulate CO₂ emissions from motor vehicles, it also disavowed, as no longer representing the agency's views, statements by Clinton administration officials claiming authority under the Clean Air Act to adopt regulatory climate policies.^[18]

Supporters of pro-growth energy policy have, in short, done a reasonably good job of fending off several major thrusts by climate alarmists during the past 18 months. However, in politics, as in war, staying permanently on defense rarely leads to victory. A purely defensive posture cedes the initiative to one's opponents, allowing the other team to generate the headlines, capture the public imagination, and frame the terms of debate.

The battle over climate policy is a protracted struggle. To win it, the friends of economic liberty, scientific inquiry, and affordable energy must advance their own vision and compel alarmists to react to it. Taking a leaf out of McCain's playbook, they should introduce their own “Sense of Congress” resolution on climate change, recruit co-sponsors, and “force votes” on the bill, year after year, until it passes.

What kinds of information and ideas should a sensible climate bill include? Read on.

SENSE OF CONGRESS ON CLIMATE CHANGE:

(a) **FINDINGS.** The Congress makes the following findings:

I. Climate Science

(1) Evidence continues to build that any increase in average global temperatures from man-made greenhouse gases will likely be close to the low end (1.4°C, 2.5°F) of the United Nations Intergovernmental Panel on Climate Change's (IPCC) global warming projections for the next 100 years.

(2) Forecasts of significantly greater warming, such as the IPCC's high-end (5.8°C, 10.4°F) projection, are based on questionable climate history, misleading surface temperature records, inaccurate models containing unconfirmed, strong amplificatory feedback effects, implausible emission scenarios, and the pretence that scientists know

¹⁷ Marty Coyne, “Bush administration backs away from GHG credits,” *Greenwire*, December 3, 2003.

¹⁸ Memorandum of Robert E. Frabricant, General Counsel, to Marianne L. Horinko, Acting Administrator, EPA's Authority to Impose Mandatory Controls to Address Global Climate Change under the Clean Air Act, August 28, 2003.

enough about natural climate variability to attribute all or most recent warming to greenhouse gas emissions. Moreover, predictions of rapidly rising seas, “super-storms,” mass extinctions, and other eco-disasters are based on speculation and fear, not science.

Questionable Climate History

(3) The IPCC and other energy suppression advocates’ chief exhibit in support of global warming alarmism is a particular reconstruction of temperature history,^[19] popularly known as the “hockey stick.”^[20] When plotted as a graph, this reconstruction forms a relatively flat, slightly downward-sloping line from 1000 A.D. to 1900 A.D. (the handle) and a sharply upward-curving line during the past 100 years (the blade). The hockey stick allegedly proves that the 20th century warming was *unprecedented* and, therefore, *unnatural*—propelled by industrial emissions of greenhouse gases.

However, the most comprehensive review of climate reconstruction literature found 79 studies that show “periods of at least 50 years which were warmer than any 50 year period in the 20th century.”^[21] Another study finds that the hockey stick “contains collation errors, unjustifiable truncation or extrapolation of source data, obsolete data, geographical location errors, incorrect calculation of principal components and other quality control defects.”^[22] A recent modeling study suggests that the hockey stick severely underestimates natural temperature variability, showing too little warming in the 11th and 12th centuries and too little cooling in the mid 16th, early 17th and early 19th centuries.^[23]

(4) Another problem is that the hockey stick mixes “apples” (reconstructed temperatures for 1000-1900 derived from tree ring densities and other climate proxy data) with “oranges” (instrumental temperature data for the 20th century).^[24] Briffa *et al.* developed a reconstructed temperature record from tree-ring widths and densities at 387 sites circling the extra-tropical Northern Hemisphere. Their reconstruction closely matches the instrumental record for the early part of the 20th century, begins to diverge from it around 1935, and significantly diverges after 1970. From 1970 on, the instrumental record is consistently and significantly warmer than the reconstructed record. Indeed, in the

¹⁹ Mann, M. E. *et al.* 1999. Northern Hemisphere Temperatures During the Past Millennium: Inferences, Uncertainties, and Limitations. *Geophys. Res. Lett.* 26: 759-762.

²⁰ Intergovernmental Panel on Climate Change, *Climate Change 2001: The Scientific Basis*, p. 134.

²¹ Soon, W., and Baliunas, S. 2003. *Lessons & Limits of Climate History: Was the 20th Century Climate Unusual?* Marshall Institute, p. 13, adapted from Soon, W. *et al.* 2003. Reconstructing climatic and environmental changes of the past 1,000 years: A Reappraisal. *Energy & Environment* 14: 233-396.

²² McIntyre, S. and McKittrick, R. 2003. Corrections to the Mann *et al.* 1998 (Proxy) Database and Northern Hemisphere Average Temperature Series. *Energy & Environment* 14: 751-771.

²³ Von Storch, Hans, *et al.* 2004. Reconstructing Past Climate from Noisy Data, *Scienceexpress* 10.1126.1096109.

²⁴ In the IPCC’s Third Assessment report, the red-colored instrumental record is clearly what causes the blade to bend sharply upwards from the blue-colored proxy-derived handle. See Figure 2.20 on page 134.

reconstructed record, the late 20th century was *cooler* than the mid-1930s and early 1940s. ^[25]

One plausible explanation for the divergence is the urban heat island effect (see finding 7, below). Many land-based thermometers are located in or near population centers, where buildings, pavement, and industrial activity raise local air temperatures, sometimes by several degrees Celsius. Tree ring samples, in contrast, typically come from forested areas at some distance from urban areas. Because the world's population grew by roughly 200 percent since 1935 and 64 percent since 1970, it is likely that the instrumental record, on which the hockey stick's blade is based, has an upward bias from local warming at urban heat islands. ^[26]

(5) Temperature data going back 420,000 years, derived from the Vostok ice core in East Antarctica, indicate that all four interglacial periods prior to the one in which we now live were warmer than the present one by 2°C or more. ^[27] A new proxy record going back 123,000 years, obtained from an ice core in North Greenland, indicates that “climate was stable during the last interglacial period, with temperatures 5°C warmer than today.” ^[28] The researchers describe this very warm period as “stable” because it ended in “a slow decline to glacial, cooler, intermediate conditions.”

The implications for the climate change debate are huge. As carbon dioxide scientists Sherwood, Keith and Craig Idso comment: “These observations clearly indicate that it is possible to have much *higher* temperatures than those of the present with *lower* atmospheric CO₂ concentrations (as much as 100ppm lower, in fact), which makes one wonder why the current interglacial is so inordinately *cool*. They also demonstrate that warmth promotes climatic stability, which is just the opposite of what the world's climate alarmists would have one believe.” ^[29]

(6) Contrary to the hockey stick, the 20th century warming was not unprecedented, outside the range of natural variability, or cause for alarm.

Misleading Surface Records

(7) The heat effects from urbanization are larger than the IPCC assumed, and have not been adequately corrected in 20th century surface temperature records. ^[30] A satellite

²⁵ Briffa, K.R. *et al.* 2002. Tree-ring width and density data around the Northern Hemisphere: Part 1, local and regional climate signals. *The Holocene* 12: 752, 754.

²⁶ Sherwood, Keith and Craig Idso, “Twentieth-Century Warming of the Northern Hemisphere,” Volume 7, Number 41: 13 October 2004, <http://www.co2science.org/edit/v7n41edit.htm>.

²⁷ Petit, J.R. *et al.* 1999. Climate and atmospheric history of the past 420,000 years from the Vostok ice core, Antarctica. *Nature* 399: 429-436.

²⁸ Andersen, K.K. *et al.* 2004. High-resolution record of Northern Hemisphere climate extending into the last interglacial period. *Nature* 431: 147-151.

²⁹ Sherwood, Keith, and Craig Idso, “A New Ice Core from North Greenland,” <http://co2science.org/edit/v7/v7n40edit.htm>.

³⁰ McKittrick, R. and Michaels, P.J. 2004. A test of corrections for extraneous signals in gridded surface temperature data. *Climate Research* 26: 159-173.

study of Houston, Texas, found that, in just 12 years, a 30 percent increase in population added 0.82°C to Houston's urban heat island^[31]—more than the IPCC calculates global temperatures rose over the entire past century, when the Earth's population grew by some 280 percent.^[32] Another study estimates that urbanization and land-use changes account for 0.27°C or about one-third of average U.S. surface warming during the past century—at least twice as high as previous estimates.^[33] Still another finds “strong observational evidence that the degree of industrialization is correlated with surface temperature,” leading the authors to conclude that “the observed surface temperature changes might be a result of local surface heating processes and not related to radiative greenhouse gas forcing.”^[34]

(8) Urbanization is not the only source of surface warmth erroneously attributed to greenhouse gas emissions. Conversion of forested area to cropland and pasture exposes vast tracts of land to direct sunlight. In addition, by reducing local moisture, deforestation reduces evaporative cooling and cloud cover. Cropland area increased by 136 million hectares (Mha) in the 18th century, 412 Mha in the 19th century, and 658 Mha from 1900 to 1990. Pasture area increased by 418, 1013, and 1096 Mha in those three periods.^[35] Thus, in the 20th century alone, at least 1.7 billion hectares or 6.7 million square miles of forest were converted to farmland and pasture.^[36] For perspective, that is an area substantially larger than the total land area of the United States (3.5 million square miles).^[37] Pielke, Sr. *et al.* estimate that in regions of intensive agricultural land-use changes such as North America, Europe and Southeast Asia, the local heating effects may actually be greater than that due to all anthropogenic greenhouse gases combined.^[38]

Natural Variability: Still an Unknown Quantity

(9) As much as half the surface warming of the past 50 years may be due to the Pacific Decadal Oscillation, a natural event that alternately warms and cools the Pacific Ocean at 20- to 30-year intervals. In just two years (1976-77), global average surface air temperatures increased by 0.2°C, and remained elevated through the end of the 20th century. No current climate model can explain this step-like increase. If anthropogenic greenhouse warming were the driving force, the 1976-77 shift in atmospheric

³¹ Streuker, D.R. 2003. Satellite-measured growth of the urban heat island of Houston, Texas. *Remote Sensing of Environment* 85: 282-289.

³² Idso, C., and Idso, K. 2003. The Urban Heat Island of Houston, Texas, *Journal Reviews*, <http://www.co2science.org/journal/2003/v6n15c1.htm>.

³³ Kalnay, E., and Cai, M. 2003. Impact of urbanization and land-use change on climate. *Nature* 423: 528-531.

³⁴ De Laat, A.T.J. and Maurellis, A.N. 2004. Industrial CO2 emissions as a proxy for anthropogenic influence on lower tropospheric temperature trends. *Geophysical Research Letters* 31:10.1029/2003GL019024.

³⁵ Klein Goldewijk, K. 2001 Estimating global land use change over the past 300 years: the HYDE database. *Global Biogeochem. Cycles* 15: 417-433, cited by Pielke, Sr., R. *et al.* 2002. The influence of land-use change and landscape dynamics on the climate system: relevance to climate-change policy beyond the radiative effect of greenhouse gases. *Phil. Trans. R. Soc. Lond.* 360: 1706.

³⁶ Author's calculation: 1 square mile = 258.998811 hectares.

³⁷ U.S. Census Bureau, *USA QuickFacts*, <http://quickfacts.census.gov/qfd/states/00000.html>.

³⁸ Pielke, Sr. *et al.* 2002.

temperatures should have preceded any corresponding change in ocean temperatures. Instead, increases in tropical sea surface and subsurface temperatures preceded the atmospheric warming by four years and 11 years, respectively. ^[39]

(10) The sun was a significant source of 20th century warming. There were two distinct warming periods during the past 100 years: from 1910 to 1945 (+0.50°C, +0.90°F), and from 1976 to the present (+0.46°C, +0.82°F). ^[40] The sun probably caused most of the 1910-1945 warming, since more than two-thirds of the buildup in greenhouse gas emissions over pre-industrial levels occurred after 1945. ^[41] The sun contributed to the later warming as well. A reconstruction of solar magnetic field fluctuations from beryllium-10 isotope concentrations in ice cores drilled in Greenland and Antarctica shows that the last 60 years were a “period of high solar activity ... unique throughout the past 1150 years.” ^[42]

(11) No current climate model can explain such strong solar variability. Consequently, modelers cannot accurately estimate the sun’s influence on global temperatures in 100-year simulations of future climate change.

Errant Climate Models

(12) The theory of catastrophic warming is built on computer models that almost universally project 50 to 100 percent more warming in the troposphere, the layer of air from roughly two to eight kilometers up, than at the surface. ^[43] Observations show the opposite is occurring. The surface appears to be warming at a rate of 0.17°C per decade since 1976. ^[44] However, the troposphere is warming at less than half that rate—by 0.08°C per decade since 1979 according to both satellite ^[45] and weather balloon measurements. ^[46] Either the climate models get the basic physics wrong, or something other than the greenhouse effect is driving much of the surface warming—or both.

³⁹ Bratcher, A.T., and Giese, B.S. 2002: Tropical Pacific decadal variability and global warming, *Geophysical Research Letters* 29: 10.1029/2002GL015191.

⁴⁰ Climatic Research Unit, University of East Anglia, <http://www.cru.uea.ac.uk/cru/data/temperature/>, using the dataset taveg12v.dat.

⁴¹ CO₂ levels rose from 280ppm in pre-industrial times to 307ppm in 1943, to 319ppm in 1959, to 376 in 2003. References: IPCC, *Climate Change 2001: The Scientific Basis*, p. 203 (for pre-industrial); <http://cdiac.esd.ornl.gov/ftp/trends/co2/siple2.013> (for 1943); and <http://cdiac.esd.ornl.gov/ftp/trends/co2/maunaloa.Co2> (for 1959 and 2003).

⁴² Solanki *et al.* 2002. Millennium-Scale Sunspot Number Reconstruction: Evidence for an Unusually Active Sun since the 1940s. *Physical Review Letters* vol. 91, no. 21, 1-4.

⁴³ Douglass *et al.* 2004. Altitude dependence of atmospheric temperature trends: Climate models versus observation. *Geophysical Research Letters* vol. 31, L13208.

⁴⁴ IPCC, *Climate Change 2001: The Scientific Basis*, p. 115.

⁴⁵ Christy, J.R., and Spencer, R. W. Global Temperature Report: April 2003. UAH Earth System Science Center, May 9, 2003, vol. 12, no. 12.

⁴⁶ Angell, J.K. 2003. Global, hemispheric, and zonal temperature deviations derived from radiosonde records. Trends Online: A Compendium of Data on Global Change. Carbon Dioxide Information Analysis Center, Oak Ridge National Laboratory, U.S. Department of Energy, Oak Ridge, Tennessee, U.S.A.

(13) Catastrophic warming forecasts assume significant net cooling effects from aerosol emissions. For example, the IPCC produced larger warming projections in its 2001 (Third Assessment) report than in its 1995 (Second Assessment) report chiefly because IPCC modelers assumed more aggressive efforts worldwide to reduce aerosol emissions.^[47] However, subsequent research finds that one type of aerosol, black carbon (“soot”), is a strong warming agent and may “nearly balance” the cooling effects of other aerosols.^[48] Indeed, NASA researchers James Hansen and Larissa Nazarenko estimate that black soot may be responsible for “25 percent of observed global warming over the past century.”^[49]

(14) The IPCC’s assumption that aerosols are a strong net cooling agent is also belied by 25 years of satellite temperature data. If the IPCC were correct, then the “sulfate free” non-industrialized Southern hemisphere should be warming more rapidly than the “sulfate rich” industrialized Northern hemisphere.^[50] The opposite is occurring. Satellite measurements from December 1979 through September 2004 show only 1/15th the amount of warming in the Southern hemisphere (0.01°C per decade) as in the Northern hemisphere (0.15°C per decade).^[51]

(15) Bottom line: Future reductions in aerosol emissions will likely cause less warming than the IPCC projects.

Unconfirmed Feedback Effects

(16) High-end warming projections assume the existence of strong positive water vapor feedback effects. In most models, the direct warming from a doubling of CO₂ concentrations over pre-industrial levels is 1.24°C (2.2°F).^[52] Greater warming supposedly occurs when the initial CO₂-induced warming accelerates evaporation and, thus, increases concentrations of water vapor, the atmosphere’s main greenhouse gas.

However, a NASA satellite study found that, “some climate models might be overestimating the amount of water vapor entering the atmosphere as the Earth warms.”^[53] Another satellite study discovered a negative water vapor feedback effect in the

⁴⁷ Wigley, T.M., and Raper, S.B.C. 2002. Reasons for Larger Warming Projections in the IPCC Third Assessment Report. *Journal of Climate* 15: 2945-2952.

⁴⁸ Jacobson, M. 2001. Strong radiative heating due to the mixing state of black carbon in atmospheric aerosols. *Nature* 409: 695-697; Sato, M. *et al.* 2003. Global atmospheric black carbon inferred from AERONET. *PNAS* vol. 100, no. 11: 6319-6324.

⁴⁹ Black Soot and Snow: A Warmer Combination, NASA News, Release: 03-420, December 22, 2003; Hansen, J. and Nazarenko, L. 2004. Soot climate forcing via snow and ice albedos. *PNAS* vol. 101, no. 2: 423-428.

⁵⁰ Patrick Michaels, Ph.D., “The sulfate hypothesis disproved,” *Environment News*, April 1, 2000, <http://www.heartland.org/Article.cfm?artId=9811>.

⁵¹ John Christy, personal communication, October 25, 2004.

⁵² Hansen, J. *et al.* 1997. Radiative forcing and climate response. *Journal of Geophysical Research* 102: 6831-6864; IPCC, *Climate Change 2001: The Scientific Basis*, p. 93.

⁵³ NASA, Top Story: Satellite Finds Warming “Relative” to Humidity, March 15, 2004, discussing Minschwaner, K. and Dessler, A. E. 2004. Water Vapor Feedback in the Tropical Upper Troposphere: Model Results and Observations. *Journal of Climate* 17: 1272-1282.

tropical troposphere—a thermostatic mechanism strong enough to cancel out most positive feedbacks in most models. As temperatures rise at the ocean’s surface, infrared-absorbing cirrus cloud cover diminishes relative to sunlight-reflecting cumulous cloud cover. Those changes allow more surface heat to escape into space. ^[54]

Implausible Emission Scenarios

(17) The IPCC’s warming projections assume implausible rates of economic growth. In the IPCC scenario with the lowest cumulative emissions and lowest temperature increase, per capita GDP in 2100 is more than 70 times 1990 levels in Asian developing countries and nearly 30 times 1990 levels in the rest of the developing world. These growth assumptions would be unrealistic even in a high-emissions scenario. As Ian Castles of the Australian National University points out, “No significant country has ever achieved a 20-fold increase in output per head in a century, let alone the 30-fold or 70-fold increases projected by the IPCC for most of the world’s population.” ^[55]

Similarly, whereas the International Energy Agency projects electricity generation in developing countries to increase to 3.2 times the 2000 level by 2030, the IPCC low-emissions scenario projects a 5.5-fold increase in consumption during that period. ^[56] Incredibly, the same “low-case” scenario implicitly projects that in 2100, average income levels in Russia, North Korea, South Africa, Malaysia, Libya, Algeria, Tunisia, Saudi Arabia, Israel, Turkey, and Argentina will exceed per capita income in the United States. ^[57]

Inflated growth projections lead to overblown emission scenarios, which in turn lead to overheated warming projections.

Warming Will Likely Be Close to IPCC Low-End Projection

(18) When the IPCC’s main climate model is run with more realistic inputs—the finding that the net cooling effect of aerosols is small, the discovery of a tropical cloud thermostat, and the assumption (based on the past 25 years of history) that greenhouse gas concentrations will increase at a constant rather than exponential rate—the projected 21st century warming drops from 2.0-4.5°C to 1.0-1.6°C. ^[58] Similarly, in the “alternative” emissions scenario developed by James Hansen, the NASA scientist whose 1988 congressional testimony put global warming on the public policy map, average

⁵⁴ Lindzen *et al.* 2001. Does the Earth Have an Adaptive Infrared Iris? *Bulletin of the American Meteorological Society* 82: 417-32.

⁵⁵ Ian Castles, “Greenhouse emissions calculations quite wrong,” Canberra Times, August 29, 2002, available in Castles, I. and Henderson, D. 2003: The IPCC Emission Scenarios: An Economic-Statistical Critique, *Energy & Environment* Nos. 2 & 3: 166-168.

⁵⁶ Ian Castles, *Forecasting Global Output and Emissions*, IPA Climate Conference, p. 8, <http://www.ipa.org.au/pubs/special/climate/castlepaper.html>.

⁵⁷ Castles & Henderson, 2003, p. 179.

⁵⁸ Michaels *et al.* 2002. Revised 21st-century temperature projections, *Climate Research*, 23:1-9.

global temperatures increase $0.75 \pm 0.25^{\circ}\text{C}$ by 2050, a warming rate of $0.15 \pm 0.05^{\circ}\text{C}$ per decade.^[59]

(19) The mathematical form of most climate models also supports the conclusion that any anthropogenic global warming during the 21st century is likely to be small. Nearly all models predict that, once anthropogenic warming starts, the atmosphere warms at a constant rather than an accelerating rate.^[60] As noted earlier, the troposphere has warmed 0.08°C per decade since 1979 while the surface appears to have warmed 0.17°C per decade since 1976. Even under the questionable assumption that all recent warming is due to man-made greenhouse gases, with no help from urban heat islands, conversion of forests to croplands and pasture, solar variability, or the Pacific Decadal Oscillation, the linear form of model projections implies that the world will warm only 0.8°C to 1.7°C over the next 100 years.

(20) No fair-minded observer would describe a 21st century warming of 1.7°C or even 2°C as a “crisis.” A warming of that magnitude would benefit some regions, sectors, and eco-systems, and harm others.^[61] However, the impacts, both positive and negative, would likely be small compared to other factors affecting economic growth, environmental quality, and public health.

Unfounded Climate Scares

(21) ***Towering Seas:*** Predictions of catastrophic changes in sea levels due to global warming are science fiction, not science. According to the IPCC, “It is now widely agreed that major loss of grounded ice and accelerated sea level rise are very unlikely during the 21st century.”^[62] Indeed, the West Antarctic ice sheet is thickening rather than thinning,^[63] and large areas of Antarctica are cooling,^[64] as are the coastal regions of the Greenland ice sheet.^[65] Satellite altimetry indicates no net change in the rate of sea-level rise during the past decade, leading the scientist conducting the study to eschew “fear of any massive future flooding as claimed in most global warming scenarios,” and to reject the IPCC’s model projections of an 8-86 centimeter (3-34 inch) sea-level rise in the 21st century as “untenable, not to say impossible.”^[66]

⁵⁹ Hansen, J. E. and Sato, M. 2001. Trends of measured forcing agents, *PNAS*, vol. 98, no. 26: 14778-14783.

⁶⁰ Michaels, *et al.*, 2002.

⁶¹ Robert Mendelsohn, *The Greening of Global Warming* (AEI Press, 1999), pp. 24-25, http://www.aei.org/docLib/20040218_book109.pdf.

⁶² IPCC, *Climate Change 2001: The Scientific Basis*, p. 642.

⁶³ Joughin, I. and Tulaczyk, S. 2002. Positive Mass Balance of the Ross Ice Streams, West Antarctica. *Science*, 295: 451-452.

⁶⁴ Doran, P.T. *et al.* 2002. Antarctic climate cooling and terrestrial ecosystem response. *Nature* 415: 517-520.

⁶⁵ Chylek, P. *et al.* 2004. Global warming and the Greenland ice sheet. *Climatic Change* 63: 201-221.

⁶⁶ Mörner, N-A. 2003. Estimating future sea level changes from past records. *Global and Planetary Change* 40: 49-54.

(22) **Extreme Weather:** Predictions of “hyper-canes” and “super-storms” due to global warming are science fiction, not science. The IPCC finds “no compelling evidence to indicate that the characteristics of tropical and extra-tropical storms have changed” during the 20th century.^[67] The frequency and intensity of Atlantic tropical storms decreased during the five decades from 1944 through 1995—a period of net global warming and rapidly rising CO₂ concentrations.^[68] More than a dozen recent studies find no increase in the frequency or severity of extreme weather events in North America or the world generally.^[69]

Eight named tropical cyclones developed in the Atlantic basin in August 2004, breaking the record for named tropical storms in the month of August.^[70] Alarmists were quick to blame those storms on global warming.^[71] Yet the continental United States experienced its 16th coolest summer (June-August) and seventh coolest August since 1895.^[72] Satellite measurements of the lower troposphere in the area from 10°N to 25°N and 20°W to 80°W (tropical north Atlantic, most of the Caribbean) show that the region had a cooler summer in 2004 than in the previous three years, and that the past six summers have been cooler than the mean summer temperature of the past 25 years.^[73]

(23) **“Killer” Heat Waves:** Global warming will likely have minimal impacts on total heat-related mortality in the United States.^[74] Predictions of sharp increases in U.S. mortality from more frequent and severe heat waves overlook people’s proven capacity to adapt to and protect themselves from climate-related stresses. During the past several decades, the sensitivity of the American population to extremes of heat and humidity has declined significantly in most major U.S. cities notwithstanding an overall rise in urban temperatures, whether due to climate change or the growth of urban heat islands, and the migration of population to hotter climate zones. The decline in heat-related mortality results from a combination of factors: improved medical care, increased availability and use of air conditioning, greater public awareness of the potential dangers of heat stress, and both human biophysical and infrastructural adaptations. Southern cities, where summer heat and humidity are common and adaptation to climatic warmth is widespread, exhibit little or no evidence of increased mortality on hot and humid days.

⁶⁷ IPCC, *Climate Change 2001: The Scientific Basis*, p. 33.

⁶⁸ Landsea, C. *et al.* 1996. Downward trends in the frequency of intense Atlantic tropical storms during the past five decades. *Geophysical Research Letters* 23: 1697-1700.

⁶⁹ For a literature review, see Storms (North America) – Summary, <http://www.co2science.org/subject/s/summaries/stormsna.htm>.

⁷⁰ National Climate Data Center (NCDC), Climate of 2004 August in Perspective, 15 September 2004, <http://www.ncdc.noaa.gov/oa/climate/research/2004/aug/aug04.html>.

⁷¹ For example, Mark Lynas, “Warning in the Winds,” *Washington Post*, September 19, 2004.

⁷² NCDC, *Id.*

⁷³ Data supplied by Professor John Christy, University of Alabama, Huntsville, personal communication.

⁷⁴ Davis, R. *et al.* 2004. Seasonality of climate-human mortality relationships in US cities and impacts of climate change. *Climate Research* 26:61-76; Davis *et al.* 2003. Decadal changes in summer mortality in U.S. cities. *International Journal of Biometeorology* 47: 166-175; Davis *et al.* 2002. Decadal changes in heat-related human mortality in the eastern United States. *Climate Research* 22: 175-184.

(24) **Smog:** U.S. air quality will improve substantially over the next two decades, whether global warming occurs or not. Predictions of more frequent and severe air pollution episodes in U.S. cities, although intuitively plausible because heat promotes ozone formation, ignore the history of dramatic air quality improvements over the past 30 years and the panoply of regulatory requirements that ensure continuing reductions in air pollution over the next two decades. Notes air quality analyst Joel Schwartz: “Since 1975, a period during which climate alarmists argue that the climate has already significantly warmed, the national-average number of exceedances of the 1-hour ozone standard declined 95 percent (from 10 to 0.5 days per year), while the number of 8-hour ozone exceedances declined about 60 percent (from 14 to 6 per year).”^[75]

Hefty reductions in smog-forming emissions were the key to this progress. Nitrogen oxide (NO_x) emissions decreased approximately 27 percent since 1980 and 22 percent since 1990. Volatile organic compound (VOC) emissions decreased approximately 48 percent since 1980 and 32 percent since 1990.^[76]

EPA regulations already on the books ensure that most smog-forming pollution will be eliminated over the next 20 years.^[77] These include:

- NO_x SIP Call regulation requiring a 60 percent reduction in NO_x emissions from power plants and industrial boilers during the May-September ozone season
- Tier II emission standards for cars, under which the average vehicle on the road in 15 to 20 years will be 90 percent cleaner than today’s average vehicle
- Diesel truck rule requiring a 90 percent reduction in NO_x and soot emissions from trucks beginning in 2007
- Non-road diesel rule requiring similar reductions in emissions from construction equipment, farm machinery, and marine engines.

(25) **Malaria:** Even if some U.S. regions become warmer and wetter, malaria will not make a comeback as long as misguided policies do not cripple wealth creation or impede the use of proven vector-control measures. Predictions of malaria outbreaks in Europe and the United States, although intuitively plausible because mosquitoes breed faster in warmer and wetter weather, ignore the fact that malaria is primarily a disease of poverty, not of climate. Malaria outbreaks were common in such northerly climes as Minnesota, Canada, Britain, Scandinavia, and Russia during the 19th century, when average global temperatures were cooler than today.^[78] The resurgence of malaria in some developing countries is due to decreased spraying of homes with DDT,^[79] anti-malarial drug

⁷⁵ Joel Schwartz, “Desperately Seeking Climate Change Impacts,” *Tech Central Station*, August 4, 2004.

⁷⁶ U.S. EPA, *The Ozone Report: Measuring Progress through 2003*, p. 10.

⁷⁷ Joel Schwartz, *No Way Back: Why Air Pollution Will Continue to Decline* (Washington, D.C.: AEI Press, 2003).

⁷⁸ Reiter, P. 2001. Climate change and mosquito-borne disease. *Environmental Health Perspectives* 109: 141-161.

⁷⁹ Roberts, D.R. *et al.* 1997. DDT, Global Strategies, and a Malaria Control Crisis in South America. *Emerging Infectious Diseases* vol. 3, no. 3.

resistance, and incompetent public health programs, not to any ascertainable changes in climate.^[80]

(26) **Species Loss:** Predictions of widespread species extinctions due to global warming overlook the ecological benefits of rising CO₂ levels and the observed expansion of habitat ranges. Carbon dioxide enrichment of the atmosphere raises the optimum temperature for plant growth. For example, an extra 300 parts per million (ppm) of CO₂ would increase optimum temperature for most plants by about 4 to 8°C—exceeding global warming projections in all but the most lurid scenarios. As atmospheric temperature and CO₂ levels have risen, the range of plant habitats has expanded poleward in latitude and upward in elevation, with no loss of habitat at lower latitudes and elevations. Animals that depend on those plants for sustenance have similarly been able to extend their ranges. Thus, during the past century, “individual animal species, like individual plant species, have measurably increased the areas of the planet’s surface that they occupy, creating more overlapping of ranges, greater local species richness, and an improved ability to *avoid* extinction.”^[81]

(27) **Coral Bleaching:** Predictions of irreversible damage to Earth’s coral reefs from global warming are both scientifically dubious and politically irresponsible. The scleractinian corals, which are today’s major reef builders, evolved in the mid-Triassic Period, when the earth was “considerably warmer” than today, and thrived “throughout the Cretaceous, even when temperatures were 10-15°C *higher* than at present.”^[82] Analysis of coral skeletal remains from Australia’s Great Barrier Reef indicates that the tropical ocean about 5,350 years ago was 1.2°C warmer than the mean for the early 1990s.^[83] Corals have been around for hundreds of millions of years and have survived countless changes in the global environment.

According to the IPCC, the top 300 meters of ocean warmed 0.3±0.15°C from 1958 to 1998, a warming rate of 0.037°C per decade.^[84] Even if the warming rate were to double, average sea temperature in 2100 would increase by only 0.74°C and still be lower than in previous geologic periods when corals evolved or flourished. Moreover, the current warming “rate” may have little if anything to do with greenhouse gas emissions. The warming was not continuous but occurred in two main spurts.^[85] The first warming, in 1976-77, is attributable to the PDO (see finding 9). The second, in 1997-98, is attributable to El Niño. The PDO and El Niño are natural climate oscillations.

⁸⁰ Hay, S.L., *et al.* 2002. Climate Change and the resurgence of malaria in the East African Highlands. *Nature* 21: 905-909; Shanks, D.G. *et al.* 2002. Meteorological Influences on Plasmodium Falciparum Malaria in the Highland Tea Estates of Kericho, Western Kenya. *Emerging Infectious Diseases* vol. 8, no. 12: 1404-1408.

⁸¹ Idso, S. *et al.* 2003. *The Specter of Species Extinction: Will Global Warming Decimate Earth’s Biosphere?* George C. Marhsall Institute & Center for the Study of Carbon Dioxide and Global Change.

⁸² Coral Reefs (History) – Summary, <http://www.co2science.org/subject/c/summaries/coralhistory.htm>.

⁸³ Gagan, M.K. *et al.* 1998. Temperature and Surface-Ocean Water Balance of the Mid-Holocene Tropical Western Pacific. *Science* 279: 1014-1018.

⁸⁴ IPCC, *Climate Change 2001: The Scientific Basis*, p. 118.

⁸⁵ IPCC, *Climate Change 2001: The Scientific Basis*, Figure 2.11, p. 118.

Alarmists cite recent “bleaching” events as evidence of a sharp global warming threat.^[86] Adverse changes in water temperature, chemistry, or quality can cause corals to “bleach” (eject the symbiotic algae that supply them with nutrients, energy, and color). Bleaching occurred at many reefs around the world in 1998, the warmest year globally in instrumental sea temperature records.^[87] However, as just noted, what spiked sea temperatures in 1998 was the 1997-98 El Niño, probably the strongest of the century. Of course, some alarmists assert that global warming is making El Niño episodes more frequent and severe. However, there is no known link between El Niño and atmospheric greenhouse gas concentrations.

El Niño occurs when the easterly trade winds that pull cold water up from the deeper ocean off the Pacific Coast of South America weaken or even reverse direction. The result is a rapid warming of the Tropical Pacific Ocean. The 1998 bleaching events prove only that El Niño and the resulting *sudden* changes in sea temperature can induce bleaching, not that gradually increasing levels of atmospheric greenhouse gases endanger reefs.

(28) Many reef ecosystems are threatened, but the real reef crisis predates by decades any possible late 20th century global warming from greenhouse gases. Pandolfi *et al.*, a team of a dozen biologists who surveyed 14 of the earth’s major reef systems, found that “most...were substantially degraded before 1900,” and that, “all of the reefs in our survey were substantially degraded long before the first observations of mass mortality resulting from bleaching and outbreaks of disease.”^[88]

In a recent review of the scientific literature, the Idsos catalogue 13 types of *local* anthropogenic insult that are damaging and endangering reefs.^[89] These local affronts to reef ecosystem health, especially water pollution and sediment loading, could be making corals more vulnerable to heat stress and less able to recover from bleaching episodes than was the case in previous decades and centuries.

However, that is all the more reason to concentrate on improving the management of specific reefs. Policymakers and stewards can do something about over-fishing, sediment loading, and pollution. They can do zilch about El Niño. And as Pandolfi *et al.* emphasize, “Regardless of these new threats [such as mass bleaching events], reefs will not survive without immediate protection from human exploitation over large spatial areas.”

Energy rationing schemes like Kyoto can do nothing to save reefs from *known* environmental threats in the policy relevant timeframe—the next few decades. Climate

⁸⁶ Sydney Centre for International and Global Law, *Global Climate Change and the Great Barrier Reef: Australia’s Obligations under the World Heritage Convention*, 21 September 2004, http://www.law.usyd.edu.au/scigl/SCIGLFinalReport21_09_04.pdf.

⁸⁷ IPCC, *Climate Change 2001: The Scientific Basis*, p. 113.

⁸⁸ Pandolfi, J.M., *et al.* 2003. Global Trajectories of Long-Term Decline of Coral Reef Ecosystems. *Science* 301: 955-958.

⁸⁹ Great Barrier Reef – Summary, <http://www.co2science.org/subject/c/summaries/greatbarrierreef.htm>.

alarmism could even make matters worse by distracting public attention from clear and present dangers, diverting resources from effective stewardship strategies, and fostering the fatalistic view that coral extinction in a warming world is inevitable.

(29) **Deep Freeze:** Fears that global warming will trigger a new glacial period, as in the sci-fi film *The Day After Tomorrow*, are a hobgoblin. In a popular disaster scenario, ice melt and increased rainfall from global warming reduce the salinity and density of ocean surface water to the point where it no longer sinks as it cools. This supposedly shuts down the Atlantic Meridional Overturning (AMO), a convective system that pulls warm water from the tropics to the higher latitudes. A massive infusion of fresh water may have disrupted the AMO and caused a regional cooling 8,200 years ago, when a huge ice dam burst, allowing lakes Agassiz and Ojibway to drain swiftly through the Hudson Strait to the Labrador Sea.^[90] However, there are no comparable fresh water bodies that could pour into the ocean at a similar rate today.^[91]

(30) Speculation that global warming would shut down the Gulf Stream, a wind-driven system that transports warmth to Northern Europe, has no scientific merit. The Gulf Stream is energized primarily by the Earth's spin and secondarily by the lunar tides, not by salinity levels in the oceans.^[92] Thus, even in climate models that project a weakening of the AMO during the 21st century, Europe continues to warm, albeit "more slowly than the rest of the world."^[93]

Kilimanjaro Snow Job^[94]

(31) Contrary to alarmists, neither the vanishing snows of Mount Kilimanjaro nor the retreat of Arctic Sea ice cover nor the melting glaciers of Glacier Park, Montana are portents of disaster or even evidence of CO₂-induced warming.

During the debate on the Climate Stewardship Act, Sen. McCain displayed before-and-after photos of Kilimanjaro and the Arctic Sea as proof positive that CO₂ emissions are despoiling our beautiful planet. "You can believe me or your lyin' eyes," he said.^[95] But monthly mean air temperatures at the Kilimanjaro summit "vary only slightly around the annual mean of -7.1°C", well below freezing, and the snows of Kilimanjaro have been disappearing since 1880, well before the recent rise in CO₂ levels and global temperatures. In 1880, the East African climate suddenly became drier. With less snowfall to replenish the glacier and less cloud cover to shield it from solar radiation,

⁹⁰ Barber, D.C., *et al.* 1999. Forcing of the cold event of 8,200 years ago by catastrophic drainage of Laurentide lakes. *Nature* 400: 344-348.

⁹¹ Weaver, A. J. and Hillaire-Marcel, C. 2004. Global Warming and the Next Ice Age. *Science* 304: 400-402.

⁹² Wunsch, C. 2004. Gulf Stream safe if wind blows and Earth turns. *Nature* 428: 8.

⁹³ Pew Center on Global Climate Change, *The Day After Tomorrow: Could It Really Happen?* <http://www.pewclimate.org/dayaftertomorrow.cfm#6>.

⁹⁴ Dr. Patrick Michaels coined this witticism.

⁹⁵ *Congressional Record – Senate*, October 30, 2003, S13584.

Kilimanjaro lost glacial mass even during periods of global and regional cooling.^[96] For example, between 1953 and 1976, a period of global cooling, the glacier lost a whopping 21 percent of its 1912 area. Since 1976, the glacier lost another 12 percent, even though satellite data show a 0.4°F cooling trend at Kilimanjaro and the surrounding countryside since measurements began in 1979.^[97]

As for the Arctic Sea, satellite photos show that ice cover has contracted since 1979, a period when the region warmed. However, the Arctic has not warmed faster than the rest of the Northern Hemisphere, contrary to what we would expect if the polar warming were due to an intensification of the greenhouse effect. Moreover, the Arctic was warmer during the late 1930s and early 1940s, before the rapid rise in CO₂ levels, than it is today.^[98] For all we know—satellite photography did not exist 65 years ago—the Arctic then looked pretty much as it does now. Oscillatory changes in wind patterns and ocean currents can decisively affect the extent and mass of Arctic Sea ice.^[99] “Since the mid-1960s,” notes University of Virginia Professor Patrick J. Michaels, “winds have generally trended away from patterns that support a lot of ice and towards those favoring less ice.”^[100]

Finally, there is no evidence that man-made global warming is melting the glaciers in Glacier Park. The Park’s glaciers melt only in the summer months, and, as National Climate Data Center records show, there has been no statistically significant summertime warming trend in Western Montana since recordkeeping began in 1890.^[101]

Unappreciated Benefits of CO₂

(32) Alarmists fail to incorporate the known ecological benefits of rising CO₂ levels in their models. Scores of laboratory and field studies show that higher CO₂ concentrations help most plants grow faster, stronger, and more profusely, utilize water more efficiently, and resist pollution and other environmental stresses.^[102] Needless to say, all animals directly or indirectly depend on plants as a food source. Based on numerous empirical studies, the 100ppm increase in atmospheric CO₂ content over the past 150 years has increased mean crop yields by the following amounts: wheat, 60 percent; other C3

⁹⁶ Kaser, G., *et al.* 2004. Modern Glacier Retreat on Kilimanjaro as Evidence of Climate Change: Observations and Facts. *International Journal of Climatology* 24: 329-339.

⁹⁷ The CO₂ & Climate Team, “‘Snow Fooling!’” http://www.co2andclimate.org/wca/2004/wca_14apf.html; Christy J. R. *et al.* 2003. Error estimates of version 5.0 of MSU-AMSU bulk atmospheric temperatures. *Journal of Atmospheric and Oceanic Technology* 20: 613-629.

⁹⁸ Polyakov, I. *et al.* 2002. Trends and variations in Arctic climate system. *EOS, Transactions, American Geophysical Union* 83: 547-548.

⁹⁹ Köberle, C., and Gerdes, R. 2003. Mechanisms Determining the Variability of Arctic Sea Ice Conditions and export, *Journal of Climate* 16: 2843-2858; Polyakov, I. *et al.* 2003. Arctic Ocean variability derived from historical observations. *Geographical Research Letters* vol. 30, no. 6: 31-34.

¹⁰⁰ Patrick J. Michaels, *Meltdown: The Predictable Distortion of Global Warming by Scientists, Politicians, and the Media* (Washington, D.C.: Cato Institute, 2004), p. 51.

¹⁰¹ Michaels, *Meltdown*, p. 37, citing <http://www.wrcc.dri.edu>.

¹⁰² Idso, K.E. and Idso, S.B. 1994. Plant responses to atmospheric CO₂ enrichment in the face of environmental constraints: A review of the past 10 years' research. *Agricultural and Forest Meteorology* 69: 153-203.

cereals, 70 percent; C4 cereals, 28 percent; fruits and melons, 33 percent; legumes, 62 percent; root and tuber crops, 67 percent; and vegetables, 51 percent.^[103]

Were it not for the extra CO₂ put into the atmosphere by fossil fuel combustion, either many people now living would not exist, or many forests now standing would have been cleared and turned into farmland—or both. CO₂ emissions are literally greening the planet, enhancing biodiversity and global food availability. Continuing CO₂ enrichment of the atmosphere will be necessary to feed a global population expected to increase by 3.3 billion over the next 50 years—and limit pressures to convert forests and wetlands into cropland.^[104]

Unappreciated Benefits of Climatic Warmth

(33) Alarmists overlook the benefits of climatic warmth. Climate tends to be most stable—least susceptible to abrupt changes in weather patterns and global temperatures—during “peak” interglacial periods, i.e., periods of greatest warmth.^[105] Historically, warm periods are associated with calmer weather, enhanced agricultural yield, and gains in longevity and health; and cold periods with the opposite conditions. For example, in Europe, storms, famines, droughts, floods, and epidemics were generally more frequent and severe during the Little Ice Age (roughly 1450 to 1850), when average temperatures were cooler than those of the 20th century, than during the Medieval Warm Period (roughly 800 to 1300), when average temperatures were as warm as or warmer than those of the 20th century.^[106]

(34) Recent climate changes are enhancing the “net primary productivity” of the Earth’s green biomass. Satellite data from 1982 to 1999 indicate that, “global changes in climate have eased several critical climatic constraints to plant growth, such that net primary production increased 6% ... globally,” according to a study published in the journal *Science*. The Amazon rain forests accounted for 42 percent of the observed increase in plant growth.^[107] As one commentator put it, “In general, where temperatures restricted plant growth, it became warmer; where sunlight was needed, clouds dissipated; and where it was too dry, it rained more.”^[108]

(35) The recent warming period has been a time of unprecedented gains in longevity, health, and nutrition. In all of the G-7 countries—Canada, France, Germany (excluding the former East Germany), Italy, Japan, the United Kingdom, and the United States—

¹⁰³ Population – Summary, <http://www.co2science.org/subject/p/summaries/population.htm>.

¹⁰⁴ Editorial Commentary, “Two Crises of Unbelievable Magnitude: Can We Prevent One Without Exacerbating the Other?” June 13, 2001, http://www.co2science.org/edit/v4_edit/v4n24edit.htm.

¹⁰⁵ For a literature review, see Editorial Commentary, “Global Warmth: A Proven Protection Against Large and Rapid Climate Changes,” January 30, 2002, http://www.co2science.org/edit/v5_edit/v5n5edit.htm.

¹⁰⁶ Thomas Gale Moore, “Global Warming: A Boon to Humans and Other Animals,” *Essays in Public Policy*, Hoover Institution, 1995.

¹⁰⁷ Nemani, R. R., *et al.* 2003. Climate-Driven Increases in Global Terrestrial Net Primary Production from 1982 to 1999. *Science* 300: 1560-1562. See also Cao, M. *et al.* 2004. Remotely sensed interannual variations and trends in terrestrial net primary productivity 1981-2000. *Ecosystems* 7: 233-242.

¹⁰⁸ Roger Highfield, *Daily Telegraph*, June 6, 2003.

“mortality at each age has declined exponentially at a roughly constant rate” during the past half century, according to a study published in *Nature*.^[109] The main reason is that people, especially the elderly, are enjoying better health.^[110] Since 1961, global per capita food production has increased by 23 percent, even though world population doubled, and developing countries achieved an impressive 52 percent increase in per capita crop yields.^[111] Such facts are not easily reconciled with belief in a global climate crisis. Either there has been less warming than alarmists claim, or the adverse impacts are less severe than alarmists claim, or the health and economic effects are actually the opposite of what alarmists claim.

II. Climate Economics

Energy Rationing: Ineffective, Inequitable and Unsustainable

(36) The Kyoto Protocol and other carbon cap-and-trade policies are energy-rationing schemes, because CO₂ is the inescapable byproduct of the carbonaceous fuels—coal, oil, natural gas—that supply roughly 85 percent of the world’s energy. Like energy taxes, carbon caps would increase consumer prices for electricity, gasoline, food, and manufactured goods. Poor households would be hit hardest, because they spend a larger portion of total income on energy.^[112]

(37) Kyoto is all economic pain for no environmental gain. The U.S. Energy Information Administration estimates that the Kyoto Protocol would cost the United States \$77 billion to \$283 billion annually, depending on the extent of international emissions trading.^[113] Yet Kyoto would have no perceptible effect on global temperatures, averting a hypothetical 0.07°C of warming by 2050.^[114] Such a miniscule temperature change would be too small for scientists to distinguish from the “noise” of natural climate variability, and produce no measurable benefit for people or the planet.

(38) Pursuing emission reduction targets beyond Kyoto’s would only make a bad deal worse. To assess the economic rationality of a climate policy, one must compare marginal costs to marginal benefits—the cost of reducing one more unit of greenhouse gas emissions versus the benefits of doing so. Kyoto’s targets represent the low-hanging fruit—the least costly emission reduction opportunities. Whereas Kyoto’s environmental benefits (if any) would rise linearly with each additional ton of CO₂ emissions avoided,

¹⁰⁹ Tuljapurkar, S., Li, N. and Boe, C. 2000. A universal pattern of mortality decline in the G7 countries. *Nature* 405: 789-792.

¹¹⁰ Horiuchi, S. 2000. Greater lifetime expectations. *Nature* 405: 744-745.

¹¹¹ Bjørn Lomborg, *The Skeptical Environmentalist: Measuring the Real State of the Planet* (Cambridge: Cambridge University Press, 2001), p. 61, citing FAO data.

¹¹² Congressional Budget Office, *An Evaluation of Cap-and-Trade Programs for Reducing U.S. Carbon Emissions*, June 2001, pp. 4, 8, 20.

¹¹³ Energy Information Administration, *Impacts of the Kyoto Protocol on Energy Markets and the U.S. Economy*, October 9, 1998, p. 122.

¹¹⁴ Wigley, T. 1998. The Kyoto Protocol: CO₂, CH₄, and Climate Implications. *Geophysical Research Letter* 25: 2285-88.

the costs would rise exponentially. The benefit-cost ratio would deteriorate with each increment of additional regulatory stringency.

(39) Any serious attempt to stabilize CO₂ levels via regulation would be economically ruinous and, thus, politically unsustainable. A study by 18 scholars, published in *Science*, concludes that there is no regulatory solution to the potential problem of anthropogenic climate change.^[115] The authors examine a host of options that might be used in coming decades to stabilize CO₂ concentrations, including wind and solar energy, nuclear fission and fusion, biomass fuels, efficiency improvements, carbon sequestration, and hydrogen fuel cells. They find that, “All these approaches currently have severe deficiencies that limit their ability to stabilize global climate.”

The authors specifically take issue with the IPCC’s claim that “known technological options could achieve a broad range of atmospheric CO₂ stabilization levels, such as 550ppm, 450ppm or below over the next 100 years.” As noted in the study, world energy demand could triple by 2050. However, “Energy sources that can produce 100 to 300 percent of present world power consumption without greenhouse emissions do not exist operationally or as pilot plants.” The authors conclude: “CO₂ is a combustion product vital to how civilization is powered; it cannot be regulated away.”

“Co-Benefits” Ploy

(40) Claims of significant air quality “co-benefits” from “multi-pollutant strategies”—proposals to cap CO₂ emissions from power plants along with traditional pollutants such as nitrogen oxides (NO_x) and sulfur dioxide (SO₂)—are a pitiful ploy to sell climate policies that cannot stand on their own merits. As a pollution control measure, CO₂ caps would add little to current regulations, which already ensure substantial air quality improvement over the next 20 years (see finding 24). Worse, the costs would far outstrip the benefits, because it is much more expensive to reduce air pollution as a side effect of energy rationing than to reduce air pollution directly.^[116]

An EIA study makes this clear. Reducing NO_x emissions 75 percent below 1997 levels by 2005 under a program with a 2002 starting date would cost power producers and consumers \$3 billion in 2005. Reducing SO₂ emissions 75 percent below 1997 levels by 2005 would also cost \$3 billion in 2005. Reducing CO₂ emissions by 7 percent below 1990 levels by 2005 would cost \$77 billion in 2005. If the three requirements are “integrated,” the total cost is \$77 billion—\$5 billion less than if the requirements are implemented one at a time, with no coordination. That \$5 billion “savings” is due to the “co-benefits” of “integration”—the fact that CO₂ reductions entail ancillary NO_x and SO₂ reductions, and vice versa. However, if the goal is cleaner air, then the “multi-pollutant” approach saves no money at all. Rather, it spends \$77 billion to achieve \$6 billion worth

¹¹⁵ Hoffert, M.I., *et al.* 2002. Advanced Technology Paths to Global Climate Stability: Energy for a Greenhouse Planet. *Science* 298: 981-987.

¹¹⁶ Joel Schwartz, *New Study Distorts Health Benefits of Greenhouse Gas Reductions*, RPPi Rapid Response No. 105, August 21, 2001, http://www.rppi.org/rr105.html#_edn8.

of NO_x and SO₂ reductions.^[117] The carbon cap wastes \$71 billion—wealth no longer available to meet other consumer or environmental priorities.

Opportunity Costs of Climate Alarmism

(41) Bad policy drives out good. For example, DDT, window screens, better management of standing water, and improved public health programs are more effective ways to combat malaria in Africa than trying to control the weather. However, for literally thousands of government officials, scientists, and political activists, saving the planet from global warming is a full-time job; that does not leave much time to actually do something to save Africans from malaria.

(42) Spending hundreds of billions of dollars to implement the Kyoto Protocol, let alone trillions of dollars to stabilize CO₂ concentrations at 450ppm, would divert vast public and private resources from clear and present threats to global welfare such as HIV/AIDS, hunger, and water-borne disease. For a fraction of Kyoto's cost, investments in the basics like health, water, sanitation, and agriculture would start saving millions of lives around the globe in a matter of years. In contrast, Kyoto's benefits, if any, would only begin to materialize many decades later.

(43) Even then, Kyoto-style policies would not deliver as much protection to human health and welfare as would investment in the basics or, more simply, economic growth. This is an inescapable implication of the very studies that purport to link global warming to debilitating diseases, water shortages, and other life-threatening risks. In those studies, the projected increase in numbers of people exposed to such risks due to global warming is tiny compared to the increase projected to occur anyway, due to population growth in poor countries, in the absence of climate change. Thus, for example, even if global warming does accelerate mosquito breeding cycles, modest investments in proven vector control methods would be far more protective against malaria than would expensive investments in climate stabilization.^[118]

(44) In terms of lives saved per dollar expended, Kyoto and other regulatory climate policies rank among the most poorly performing public-health investments.^[119]

Kyoto: Hidden Threat to Developing Countries

(45) Poverty is the “environment’s number one enemy”—in the words of Berkeley Energy and Resource Studies Professor Emeritus Jack Hollander—because people living

¹¹⁷ Energy Information Administration, *Analysis of Strategies for Reducing Multiple Emissions from Power Plants: Sulfur Dioxide, Nitrogen Oxides, and Carbon Dioxide*, December 2000, p. xviii.

¹¹⁸ Goklany, I. M. 2003. Relative Contributions of Global Warming to Various Climate Sensitive Risks, and Their Implications for Adaptation and Mitigation. *Energy & Environment* 14: 797-822; 2004. Climate Change and Malaria. *Science* 306: 55-57.

¹¹⁹ The Copenhagen Consensus, an international panel of leading economists, organized by Danish statistician Bjørn Lomborg, ranked Kyoto and two other mandatory climate policies as bad investments compared to programs addressing other threats to global welfare.

on the brink of starvation lack the means and incentives to protect the health and beauty of their surroundings.^[120] Inadequate energy supply is a key factor limiting both wealth creation and environmental improvement in poor countries.

About 2.4 billion people in the world today still depend on traditional biomass—firewood, charcoal, dried animal wastes, and crop residues—to cook and heat their homes.^[121] Daily indoor air pollution for these people is three to 37 times dirtier than outdoor air in the most polluted cities, and kills about 2.8 million people each year, most of them women and children.^[122] Increased access to fossil energy, especially grid-based electricity, will be critical to improving the quality of their lives.

As atmospheric scientist John Christy, a former African missionary, explains: “I always thought that if each home could be fitted with an electric light bulb and a microwave oven electrified by a coal-fired power plant, several good things would happen. The women [who currently spend much of their time gathering and hauling wood from the forests] would be freed to work on other more productive pursuits, the indoor air would be much cleaner so health would improve, food could be prepared more safely, there would be light for reading and advancement, information through television or radio would be received, and the forest with its beautiful ecosystem could be saved.”^[123] Carbon suppression policies would set back developing countries both economically and environmentally.

(46) The opinion that the Kyoto Protocol will confer an economic boon on developing countries is shortsighted and naïve. Kyoto exempts developing countries from binding emission limitations—an apparent source of competitive advantage. However, the exemption cannot last if Kyoto endures. Kyoto’s ultimate objective, CO₂ stabilization, is not even remotely attainable unless China, India, and other developing nations adopt carbon controls.^[124] Unsurprisingly, Kyoto partisans in the European Union, the U.N., and the environmental movement view the treaty as just the first step in a series of agreements, each more stringent and/or inclusive than its predecessor.^[125] If developing

¹²⁰ Hollander, Jack M. *The Real Environmental Crisis: Why Poverty, Not Affluence, Is the Environment’s Number One Enemy* (Berkeley: University of California Press, 2003).

¹²¹ International Energy Agency, “Energy & Poverty,” Chapter 13 of *International Energy Outlook 2002*, <http://www.worldenergyoutlook.com/pubs/weo2002/EnergyPoverty.pdf>.

¹²² Lomborg, p. 182, citing WHO studies.

¹²³ Testimony of John Christy, *Kyoto Global Warming Treaty’s Impact on Ohio’s Coal Dependent Communities*, House Committee on Resources, May 13, 2002.

¹²⁴ “Without participation of developing countries, the objective of stabilizing atmospheric GHG concentrations at a safe level cannot be achieved.” European Union, *Action on Climate Change Post 2012: A Stakeholder Consultation on the EU’s Contribution to Shaping the Future Global Climate Change Regime*, October 13, 2004, p. 7, http://europa.eu.int/comm/environment/climat/pdf/background_paper.pdf.

¹²⁵ David Malokoff, “Climate Change: Thirty Kyotos needed to control warming,” *Science*, December 19, 1997. Kyoto is “only the first step in a long journey towards stabilizing greenhouse gas emissions,” Statement by Klaus Toepfer, UNEP Executive Director, In Reponse to News that Russian Government Has Endorsed Kyoto Protocol, September 29, 2004, <http://www.enn.com/aff.html?id=60>. The EU advocates reducing industrial region GHG emissions 20-45 percent below 1990 levels by 2025 and 60-80 percent below by 2050. *Action on Climate Change Post 2012*, p. 6.

countries do not want to face constant pressure and bullying to constrain their energy use, they must refuse to ratify Kyoto or withdraw from it.

(47) Further, any temporary advantage developing nations might extract from the exemption pales compared to the collateral damage they would sustain from a Kyoto-induced downturn in the U.S. economy. Developing countries depend on exports for more than a quarter of their economic output, and the United States is the single largest market for developing country products. Any significant U.S. GDP loss from carbon caps would wipe out billions of dollars annually in U.S. purchases of developing country goods.^[126]

Fortunately, some U.S. and developing country leaders are beginning to recognize that they are natural allies in the fight for pro-growth energy policy. During the 2003 Johannesburg World Summit on Sustainable Development, U.S. and developing country delegations worked together to shoot down the European Union's anti-growth proposal to obtain 15 percent of global energy from costly and underperforming "renewable" sources by 2010.^[127]

An Unbalanced Debate

(48) The global warming debate has not been balanced. It has paid far more attention to the hypothetical risks of climate change than to the evident risks of climate change policy.

(49) Mandatory increases in new-car fuel economy, a favorite policy prescription of climate alarmists, typically result in the production of smaller, lighter, and, thus, less crashworthy vehicles. The National Research Council found that existing fuel economy regulations were responsible for 1,300 to 2,600 auto fatalities in 1993.^[128] Shoehorning motorists into ever smaller and lighter vehicles, whether in the name of energy conservation or climate stabilization, would only put more people at risk.

(50) Those who claim that Kyoto opponents value dollars more than lives forget that people generally use income to enhance their health and safety. Regulations that limit job creation and income growth also limit what people can afford to spend for health care, household amenities, and stress-relieving vacations. The literature on the relationship between health and wealth suggests that every \$10-50 million in added regulatory burden induces one adult death.^[129] The employment and income losses from Kyoto-style energy rationing could literally have lethal effects.^[130]

¹²⁶ Goklany, 2003, p. 816; Mills, M., 1998. *Kyoto & Our Collective Economic Future: Economic & Energy Underpinnings*, Competitive Enterprise Institute.

¹²⁷ Eryn Gable, "Earth Summit Delegates rush to finish accord," *Greenwire*, September 3, 2003.

¹²⁸ National Research Council, *Effectiveness and Impact of Corporate Average Fuel Economy (CAFE) Standards*, July 2001, p. 2-25.

¹²⁹ Lutter, R. *et al.* 1999. The Cost-per-Life-Saved Cutoff for Safety-Enhancing Regulations. *Economic Inquiry* 39: 599-608.

¹³⁰ In *Mortality Reductions from Use of Low-Cost Coal-Fired Power: An Analytical Framework* (December 2002), Daniel Klein of Twenty-First Strategies and Ralph Keeney of Fuqua School of Business at Duke

(51) Extending Kyoto-like controls to developing countries—a key component of any serious plan to stabilize global emission levels—would restrict their access to affordable, reliable, carbon-based energy, potentially condemning millions of the world’s poor to continuing hunger, squalor, and disease. International carbon trading schemes like Kyoto would also “provide an incentive for dictators to retard the economic growth of their countries so that they can sell unused carbon emission credits to other nations. Money flowing from democracies to tyrannies in this manner would only serve to prop up corrupt and despotic regimes.”^[131] Participation in Kyoto would also arm tyrants with a new rationale—“saving the planet”—to restrict development in areas inhabited by disfavored religious or ethnic groups.

(52) Wherever energy rationing is instituted, it empowers policymakers to attract bribes and compel payoffs from the affected industries. With trillions of dollars at stake in the form of carbon “credits” and emissions “allowances,” Kyoto-style policies have a high potential to corrupt political institutions, rig the marketplace on behalf of predatory special interests, and fleece consumers. Indeed, Kyoto and its successor treaties would create a “carbon cartel”—a Super-OPEC in which governments and their corporate cronies collude to restrict supply, set production quotas, and drive up consumer prices for all forms of carbon-based energy, not just oil.^[132]

(53) Climate alarmism diverts public attention from more evident threats to global welfare, and carbon stabilization schemes divert resources from more effective strategies to improve public health.

(54) Carbon caps could limit the CO₂ fertilization effect on which global food security and biodiversity partly depend.

III. Climate Politics

Kyoto: Stacking the Decks against the USA

(55) Claims that President Bush’s rejection of Kyoto puts the United States at odds with the “international community” are vacuous. The proper touchstone of U.S. policy is America’s national interest, not the airy phantom of “world opinion.” Besides, most foreign leaders share Bush’s view that carbon suppression is a terrible idea. China, India, and the rest of the developing world will have none of it. Russia, after much delay, ratified the Kyoto Protocol on November 5, 2004. However, when the Russian

University estimate that fully replacing coal-fired power in the U.S. would reduce total household income by \$125-255 billion in 2010, and could lead to 14,000 to 25,000 additional adult deaths. An obvious implication of the study is that Kyoto-style policies could cost lives as well as dollars.

¹³¹ Robert L. Bradley, Jr. & Richard W. Fulmer, *Energy: The Master Resource: An Introduction to the History, Technology, Economics, and Public Policy of Energy* (Dubuque, Iowa: Kendall/Hunt, 2004), p. 163.

¹³² Brian Mannix, “Climate change policy would create the mother of all cartels,” Heartland Institute, June 1, 2001, <http://www.heartland.org/Article.cfm?artId=1063>.

Parliament stipulated to ratification, it also issued a supplemental statement, which says that “Russia’s obligations under the protocol will have grave consequences for its economic and social development.”^[133] Russian President Vladimir Putin’s top economic advisor, Andrei Illarionov, describes Kyoto as an “an assault on economic growth, the environment, public safety, science, and human civilization itself.”^[134] Russia ratified the treaty to smooth relations with the European Union, i.e., for political rather than scientific or economic reasons.

(56) Although more than 120 countries have ratified the treaty, only 36 have agreed to adopt Kyoto’s emission reduction targets.^[135] The Kyoto-constrained countries comprise just 19 percent of the world’s nations and include only 15 percent of global population.^[136] It is the European Union, Canada, and Japan that are on the policy fringe, not the United States.

(57) The Kyoto Protocol would impose greater relative burdens on the United States than on the European Union. This is due partly to differences in population growth rates. Kyoto’s emission reduction targets are referenced to a 1990 baseline. The U.S. population has grown from 249 million in 1990 to 294 million in 2004, and is expected to reach 349 million in 2025. Europe’s population has grown from 722 million in 1990 to only 728 million in 2004, and is expected to fall back to 722 million in 2025.^[137] “What this means,” comments University of Colorado Professor Roger Pielke, Jr., “is that assuming that European greenhouse gas emissions remain constant on a per capita basis, then Europe need only follow business-as-usual to equal its 1990 emissions in 2025, as its population is projected to decrease back to 1990 levels. By contrast, the United States is projected to see a 40 percent increase in its population between 1990 and 2025. This means that for the U.S. to revert back to its 1990 level of emissions, it would need to see about a 30 percent decrease in its per capita emissions.”^[138] On a per capita basis, the

¹³³ “President Putin gives green light to Kyoto Protocol,” November 5, 2004,

<http://www.putin.ru/news/item/33002.html>.

¹³⁴ The title of Illarionov’s October 1, 2004 presentation at the National Press Club in Washington, D.C. In a press conference a year earlier (October 3, 2003), Illarionov similarly warned that ratifying Kyoto would doom Russia to “poverty, backwardness and weakness.”

¹³⁵ As of October 5, 2004, 126 countries had ratified the Kyoto Protocol. Of those, 35 have accepted quantified emission limits. See UNFCCC, Kyoto Protocol Status of Ratification, <http://unfccc.int/resource/kpstats.pdf>.

¹³⁶ Percentages are the author’s calculations based on the following assumptions. There are 192 independent countries. Source: WorldAtlas.Com, <http://worldatlas.com/nations.htm>. Global population as of mid-2004 was 6,396 million, with 953 million residing in the 36 Kyoto-constrained countries. Source: Population Reference Bureau, http://www.prb.org/pdf04/04WorldDataSheet_Eng.pdf.

¹³⁷ For U.S. population in 1990, see Hobbs, Frank and Nicole Stoops, U.S. Census Bureau, Census 2000 Special Reports, Series CENSR-4, *Demographic Trends in the 20th Century*, p. 11, <http://www.census.gov/prod/2002pubs/censr-4.pdf>. For European population in 1990, see United Nations Population Division, *World Population Prospects: The 2002 Revision Population Database*, <http://esa.un.org/unpp/p2k0data.asp>. For projections of U.S. and EU population growth from 2004-2025, see Population Reference Bureau, *2004 World Population Data Sheet*, http://www.prb.org/pdf04/04WorldDataSheet_Eng.pdf.

¹³⁸ Roger Pielke, Jr., public email communication.

United States would have to make heroic efforts, compared to the EU, to comply with the Kyoto Protocol.

(58) Other factors unrelated to environmental concern also put the United States at a disadvantage, especially vis-à-vis Britain, France, and Germany, Kyoto's chief boosters within the EU. In the 1990s, Britain's switch from coal to natural gas, France's reliance on nuclear power, Germany's closure of obsolete East German factories, and generally sluggish continental economies all worked to limit emissions growth. In contrast, a booming economy, the world's highest per capita automobile usage, and the world's largest coal reserves all worked to sustain U.S. emissions growth.

(59) To meet its Kyoto target, the United States would have to reduce its carbon emissions by 2.5 percent annually during 2001-2010. Britain, France, and Germany, on the other hand, would each have to reduce their carbon emissions by roughly 1 percent annually.^[139] In other words, meeting the U.S. Kyoto target would require two and a half times the national effort required to meet the British, French, or German targets. Yale University economist William Nordhaus estimates that from 2005 to 2025, Kyoto would cost the United States \$2.3 trillion—more than twice the cost of all other participants combined.^[140]

(60) Kyoto is, thus, a trade strategy masquerading as an environmental treaty. Europe's high business and energy taxes and "progressive" labor policies make it hard for EU firms to compete in the global marketplace. The greater relative burden Kyoto would impose on the United States would offset the competitive advantage U.S. firms derive from lower taxes, affordable energy, and a more productive workforce, dragging America down to Europe's level. As Margot Wallström, then EU environment commissioner, delicately put it when explaining Europe's support for Kyoto: "This is about international relations, this is about economy, about trying to create a level playing field for big businesses throughout the world. You have to understand what is at stake and that is why it is serious."^[141]

Kyoto-Lite Proposals: Same Slippery Slope to the Same Dead End

(61) Ostensibly "moderate" proposals like the Climate Stewardship Act would do even less than Kyoto to stabilize CO₂ levels but would create the framework for unsustainable carbon regulation. Never in history has the U.S. Government regulated energy production based on the carbon content of fuels or emissions. Adopting any cap on CO₂ emissions, however "modest," would cross a regulatory Rubicon, instituting a radical break with previous U.S. policy. From that moment on, debate in Washington would cease to be about *whether* to suppress carbon-based energy and would instead fixate on *how much*

¹³⁹ Fridtjof Unander, *From Oil Crisis to Climate Challenge: Understanding CO2 Emission Trends in IEA Countries*, International Energy Agency, COP-9, 1-12 December 2003, p. 10.

¹⁴⁰ Nordhaus, W. 2001. Global Warming Economics. *Science*: 294: 1283-1284.

¹⁴¹ Stephen Castle, "EU Sends Strong Warning to Bush Over Greenhouse Gas Emissions," *The Independent* (London), March 19, 2001.

and *how fast* to suppress it. There would no longer be any difference *in kind* between U.S. national policy and Kyoto. Ratification would almost surely follow.

(62) Pre-regulatory initiatives like tradable credits for “early” reductions are the set up for, not an alternative to, unsustainable energy rationing. Credits attain full market value only under an emissions cap, so every credit holder would have an incentive to lobby for a cap. Awarding credits for “voluntary” reductions would simply build a clientele for mandatory reductions.^[142]

IV. Superiority of No Regrets Policies

(63) Those who feel they must “do something” about climate change may usefully pursue “no regrets” options—policies that enhance society’s adaptive capabilities and are economically desirable whether global warming proves to be a problem or not. As noted above, increased investment in agriculture, water, sanitation, health, and electricity would start saving lives in developing countries almost immediately, reducing in advance a host of risks—crop failure, water shortages, malaria—that future climate change might intensify. Legal reforms that formalize and secure property rights would enable the poor in developing countries to collateralize their physical assets (homes, farms, unincorporated businesses), attract trillions of dollars in investment capital, and create the wealth needed to improve basic services and infrastructure.^[143]

(64) Removing political barriers to the import and production of genetically modified crops would alleviate malnutrition in Africa today, expand markets for U.S. agribusiness, and potentially reduce the vulnerability of developing country agricultural sectors to climate-related stresses. Replacing fixed-price water allocation schemes with water markets would improve water use efficiency today and motivate consumers to adjust quickly to future climate-induced changes in water supply.^[144] Repeal of renewable portfolio standards (regulations requiring utilities to generate a specified percentage of electricity from non-competitive energy sources like wind and solar power) would reduce electricity costs, making air conditioning more affordable to low-income households.

¹⁴² For further discussion, see Marlo Lewis, “Et Tu, Edison?” *Tech Central Station*, April 27, 2004, <http://www.cei.org/gencon/019,03981.cfm>.

¹⁴³ Foreign aid in the form of coerced wealth transfers from the poor in rich countries to the rich in poor countries is not a “no regrets” policy. Transfers all too often foster dependency and corruption rather than development. (See, e.g., Eberstadt, Nicholas. *Foreign Aid and American Purpose*. Washington: American Enterprise Institute, 1988.) Lack of formal systems for recognizing, defending, and transferring property rights is the chief impediment to wealth creation in developing countries. Without clear title to their homes and businesses, the poor in developing and former communist countries cannot attract investment capital or even collateralize their assets to obtain a loan. Adoption of formal property systems would enable them to convert their physical assets into trillions of dollars of investment capital. (See De Soto, Hernando. *The Mystery of Capital: Why Capitalism Triumphs in the West and Fails Everywhere Else*. New York: Basic Books, 2000.)

¹⁴⁴ Easterling, W. E. *et al.* 2004. *Coping with Global Climate Change: The Role of Adaptation in the United States*. Pew Center on Global Climate Change, pp. 20, 28-30.

(65) Tax reform can produce “climate friendly” results without regrets. The United States lags behind Japan, the Netherlands, and China in capital cost recovery for new investment in electric power generation, pollution control technology, and other energy assets.^[145] Replacing today’s plodding depreciation schedules with expensing (allowing firms to deduct from taxable income the full cost of capital investment in the year expenses are incurred) would stimulate investment in new plants and equipment. New capital goods tend to be cleaner, more energy efficient, and more productive than the units they replace. By modernizing U.S. capital stock, expensing would boost productivity, raise wages, and, in the process, decrease U.S. energy and carbon intensity (emissions per dollar of output).

V. Conclusion

(66) Given the growing evidence that any anthropogenic global warming will likely be at the low-end of the IPCC’s projections, the high cost and negligible benefit of mandatory carbon dioxide reductions, the manifest superiority of no-regrets approaches that make societies safer by making them wealthier, the high susceptibility of energy rationing schemes to special interest manipulation and political abuse, the abundantly documented ecological and nutritional benefits of CO₂ aerial fertilization, and the vital importance of affordable energy to human flourishing, Kyoto-style regulation is not a responsible policy option.

(b) **SENSE OF CONGRESS** — It is the sense of Congress that the United States should promote prosperity, public health, and environmental improvement, at home and abroad, by —

(1) Explaining to the American people and the international community the flawed science and unsubstantiated claims of those who predict catastrophic global warming;

(2) Explaining how CO₂ emissions are enhancing global food security and biodiversity;

(3) Explaining how Kyoto-style strategies endanger U.S. and global prosperity while having no discernible influence on potential climate change;

(4) Explaining the superiority of wealth-building strategies that attack clear and present threats to global welfare and, in the process, reduce people’s vulnerability to possible future adverse climate change, whether natural or anthropogenic in origin; and

(5) Providing technical assistance to help developing countries transform extralegal ownership rights into titled property, convert physical assets into investment capital, and enjoy the economic, health, and environmental benefits of affordable energy.

¹⁴⁵ Thorning, M. 2002. *A Positive Role for Federal Tax Policy in Promoting Energy Security and Reducing Greenhouse Gas Emissions*. American Council for Capital Formation, Special Report, <http://www.accf.org/PositiveRole11-02.pdf>.