GLOBAL WARMING AND ENERGY POLICY

OVERVIEW

Abundant and affordable energy is one of the great boons of modern industrial civilization and the basis of our standard of living. Energy makes people's lives brighter, safer, more comfortable, and more mobile. Unfortunately, billions of people in poor countries still do not have access to energy. For example, India's per capita consumption of electricity is one-twentieth of that of the United States. Hundreds of millions of Indians live "off the grid," that is without electricity, and cow dung is still a major fuel for household cooking. This continuing reliance on such pre-industrial energy sources is also one of the major causes of environmental degradation.

Whether poor people around the world ever gain access to energy depends on a number of factors, such as the development of secure property rights in poor countries and continuing technological progress. There is, however, one potential obstacle that could thwart any amount of effort to provide more energy. That threat is an international agreement that forces reductions in the consumption of hydrocarbon fuels. This is because hydrocarbons — coal, petroleum, and natural gas — provide over three-quarters of the world's total energy. Although there are many alternative sources of energy, all of these sources combined cannot begin to substitute for hydrocarbons without further significant technological innovations and massive capital investments. This is not the work of a few years, but rather of several decades.[1]

It may be objected that the Kyoto global warming treaty only proposes to reduce carbon dioxide emissions (which are the necessary product of combusting hydrocarbons) produced by already-industrialized nations. It would therefore not restrict access to hydrocarbon energy by poor countries. This objection is entirely disingenuous. The Kyoto Protocol to the United Nations Framework Convention on Climate Change was conceived and is intended as only the first step toward reducing hydrocarbon energy use worldwide. Without further protocols to reduce carbon dioxide emissions in all countries, the Kyoto treaty would be pointless.

Support for putting the world on an energy-starvation diet in order to avert catastrophic global warming has continued to gain ground among intellectuals and leaders in many countries. At the same time, however, the scientific case for catastrophic global warming has been collapsing rapidly, despite the alarmism promoted by United Nations scientific bureaucrats and repeated endlessly by the major media.

[1] For a general discussion of these issues, see Robert L. Bradley, Jr., *Julian Simon and the Triumph of Energy Sustainability* (Washington, D.C.: American Legislative Exchange Council, 2000).

THE KYOTO PROTOCOL

The scientific case for global warming alarmism is shaky and becoming shakier. Still, even if alarmism turns out to be warranted, any possible benefits of the Kyoto global warming treaty or any similar energy-suppression policies would be dwarfed by the staggering costs.

History of the Treaty

President George Herbert Walker Bush signed the United Nations Framework Convention on Climate Change (hereafter referred to as the Framework Convention)[1] at the Earth Summit in Rio de Janeiro in May 1992. Later that year the U.S. Senate ratified the treaty unanimously. It entered into force on March 21, 1994.[2]

The objective of the Framework Convention is "to achieve … stabilization of greenhouse gas concentrations in the atmosphere that would prevent dangerous anthropogenic interference with the climate system."[3] What constitutes "dangerous interference with the climate system" has never been defined.

The Framework Convention sets no mandatory limits on greenhouse gas emissions for individual nations and contains no enforcement provisions. It is therefore considered legally non-binding. However, the treaty does include provisions for additional protocols that would set mandatory emission limits.

At the Third Conference of the Parties to the Framework Convention on Climate Change (COP-3), held in Kyoto, Japan in December 1997, participants negotiated a protocol at the urging of the Clinton-Gore Administration. The Kyoto Protocol sets binding targets and timetables for reducing greenhouse gas emissions for industrialized nations.[4] Binding targets and timetables were not set for developing and Third World nations. The Kyoto Protocol will enter into force when 55 nations have ratified it and when Annex I nations listed in the Framework Convention comprising 55 percent of greenhouse gas emissions in the baseline year of 1990 have ratified it.

The Kyoto Protocol requires Annex I parties to reduce greenhouse gas emissions to an average of 5.2 percent below 1990 levels by 2008 to 2012. The United States would be required to reduce emissions to 7 percent below 1990 levels. The European Union's (EU) target is 8 percent below 1990, but the EU is allowed to share out these reductions as it pleases among its member countries. Thus some EU members will be allowed to increase greenhouse gas emissions over 1990 levels, while others must make reductions larger than 8 percent.[5]

The Clinton Administration signed the Kyoto Protocol on November 12, 1998, but did not submit it to the Senate for ratification. On July 25, 1997, before the Kyoto Protocol was negotiated, the U.S. Senate passed by a 95-0 vote the Byrd-Hagel Resolution (S. Res. 98), which stated the sense of the Senate was that it would not ratify any protocol to the Framework Convention that "would result in serious harm to the economy of the United States" and that did not include binding targets and time-

[1] The web page of the Framework Convention is located at http://www.unfccc.int. Current negotiating texts, a schedule of upcoming meetings, a list of parties that have ratified the Kyoto Protocol, and other information is also available.
[2] Full text of the Convention is available at http://www.unfccc.int/resource/conv/index.html.
[3] United Nations Framework Convention on Climate Change, Article 2, http://www.unfccc.int/resource/conv/conv_004.html.
[4] The Kyoto Protocol is available online at http://www.unfccc.de/resource/docs/convkp/kpeng.html.
[5] Ibid.

tables for developing as well as industrialized nations.[6] The Kyoto Protocol meets neither of these conditions.

The Kyoto Protocol was not completed in Kyoto in 1997. Succeeding Conferences of the Parties have attempted to resolve these remaining uncompleted areas, but so far without success. Unfinished issues include how to monitor greenhouse gas emissions, what constitutes reductions in emissions, what means may be used to meet emissions targets, and how to enforce the protocol. Various "flexibility mechanisms" allow nations to meet their emissions limits in ways other than cutting carbon dioxide emissions, but the parties have not agreed upon the extent to which nations may use these mechanisms. The flexibility mechanisms include: creating carbon sinks; international emissions trading; Joint Implementation; and the Clean Development Mechanism.

The Bush Administration announced in March 2001 that it opposed the Kyoto Protocol. On June 11, 2001, President George W. Bush further explained his reasons for considering the Protocol to be "fatally flawed" and also announced alternative actions to address the "serious issue" of global warming.[7] However, the president did not withdraw the signature of the United States from the Protocol.

COP-6 resumed in Bonn in July 2001. The press reported some progress towards resolving outstanding issues, but others who attended did not agree that much had been accomplished.[8] Key leaders declared that they would proceed to ratify the Protocol without U.S. participation.[9]

Costs of Not Implementing Kyoto

The United Nations Environment Programme (UNEP) in 2001 estimated that the total global costs associated with implementing mitigation measures to address the impacts of global warming — such as the building of dams and relocation of populations in low-lying areas — would be $300 billion per year. The U.N.'s Intergovernmental Panel on Climate Change (IPCC) estimates these costs would be approximately 2 percent of gross domestic product (GDP) in industrialized countries.[10] Yet neither of these estimates consider the fact that global warming is also likely to produce benefits — such as increased food production — that could partially offset the costs. The UNEP's and the IPCC's estimate must therefore be considered too high.

The Costs of Global Warming Policies

In contrast, the costs to the U.S. economy of compliance with the Kyoto Protocol have been estimated at between $225 and $440 billion per year:

- Charles River Associates, a private economic consulting firm, estimated that the treaty would cost an estimated $225 billion annually.[11]

[6] *Congressional Record* (25 July 1997): S.8114.

[7] President George W. Bush, "Remarks By The President On Global Climate Change," White House Press Release, 11 June 2001, http://www.whitehouse.gov/news/releases/2001/06/20010611-2.html.

[8] See Christopher Horner, "A Heated Letter from Bonn," *Washington Times*, 29 July 2001, http://www.cei.org/OpEdReader.asp?ID=1584.

[9] William Drozadiak, "U.S. Left Out of Warming Treaty," *Washington Post*, 24 July 2001, A1.

[10] Tariq Banuri et al., *Technical Summary: Climate Change 2001, A Report of Working Group III of the International Panel on Climate Change* (Geneva: IPCC, 2001), http://www.ipcc.ch/pub/wg3TARtechsum.pdf.

[11] Charles River and Associates, *The Post Kyoto Climate: Impacts on the U.S. Economy* (Washington, D.C.: Charles River and Associates, 1999).

- WEFA, Inc., another private economic consulting firm, estimated $350 billion annually.[12]

- A study by the Department of Energy's Energy Information Administration estimated $440 billion in Kyoto costs.[13]

It's worth highlighting the fact that these studies only consider costs to the United States, which produces approximately 25 percent of gross global greenhouse gas emissions. Thus, these estimates only cover 25 percent of the worldwide costs of the treaty. If the average estimated U.S. compliance cost is $300 billion, and the United States constitutes only one-quarter of emissions, then the total cost of global compliance could be roughly four times $300 billion or $1,200 billion annually.

Moreover, the costs of compliance will not offset, but will be in addition to, the costs of global warming because the Kyoto Protocol would only slow the predicted rate of global warming by an insignificant amount. Dr. Tom Wigley, of the National Center for Atmospheric Research and a Kyoto booster, has estimated that the Protocol would reduce the predicted global mean temperature in 2050 by two-tenths of a degree Celsius.

The fact is that the possible benefits of the Kyoto Protocol are negligible compared to the costs. Because the Protocol does so little to slow the rate of predicted warming, additional restrictions on greenhouse gas emissions would be necessary. Supporters of the Protocol have estimated that greenhouse gas emissions reductions totaling between 10 and 30 times those required by the Kyoto Protocol will be needed to save the planet from the threat of predicted catastrophic global warming.

Alternative Policies

In the wake of U.S. withdrawal from the Kyoto Protocol, a number of alternative policies are being proposed. Insofar as their purpose is to suppress the use of carbon-based fuels, these policies suffer from most of the same defects as the Kyoto Protocol.

- For example, "[T]he economic impacts of cap-and-trade programs would be similar to those of a carbon tax: both would raise the cost of using carbon-based fossil fuels, lead to higher energy prices, and impose costs on users and some suppliers of energy," according to a June 2001 study by the non-partisan Congressional Budget Office.

In fact, the effects of a cap-and-trade program could be worse than a carbon tax because rewarding companies for not producing energy will create a powerful lobbying force for further energy suppression measures.

So what should we be doing to address potential future global warming? In the first place, the federal government should pursue policies that make sense for other reasons whether global warming occurs or not. For example, the elimination of subsidies that encourage the use of carbon-based fuels makes sense even without global warming.[14]

[12] WEFA, Inc., *Global Warming: The High Costs of the Kyoto Protocol, National and State Impacts* (Washington, D.C.: WEFA, 1998).
[13] U.S. Department of Energy, Energy Information Administration, *Impacts of the Kyoto Protocol on U.S. Energy Markets and Economic Activity* (Washington, D.C.: U.S. DOE, 1998).
[14] Jonathan Adler et al., *Greenhouse Policy Without Regrets: A Free Market Approach to the Uncertain Risks of Climate Change* (Washington, D.C.: Competitive Enterprise Institute, July 2000), http://www.cei.org/MonoReader.asp?ID=1081.

Second, we should pursue the pro-economic growth policies that will enable us to implement mitigation measures should global warming cause problems in the future. Such pro-growth policies are essential particularly for much of the developing world, which lacks the resources to address such problems today. They not only lack the resources to provide emergency personnel in the case of natural disasters; they also lack the resources to construct disaster-resistant buildings, flood control projects, etc. By impeding economic growth, Kyoto promises to hurt, rather than help, nations grow economically and develop such resources.[15]

— Myron Ebell

Key Experts

Myron Ebell, CEI, (202) 331-1010, mebell@cei.org.
Paul J. Georgia, CEI, (202) 331-1010, pgeorgia@cei.org.
Christopher C. Horner, CEI, (202) 331-1010, chorner@cei.org.

Recommended Readings

Adler, Jonathan. Editor. *The Costs of Kyoto*. Washington, D.C.: Competitive Enterprise Institute, 1997, http://www.cei.org/costofkyoto2001.html.

Adler, Jonathan et al. *Greenhouse Policy Without Regrets: A Free Market Approach to the Uncertain Risks of Climate Change*. Washington, D.C.: Competitive Enterprise Institute, July 2000, http://www.cei.org/MonoReader.asp?ID=1081.

Cooler Heads Newsletter. Current and back issues are located at www.globalwarming.org.

Goklany, Indur M. "Richer Is More Resilient: Dealing with Climate Change and More Urgent Environmental Problems." In *Earth Report 2000.* Edited by Ronald Bailey, 156-87. N.Y.: McGraw-Hill, 2000.

McKitrick, Ross. Submission to the Joint Standing Committee on Treaties: Inquiry into the Kyoto Protocol, Parliament of Australia. 26 September 2000, http://www.uoguelph.ca/~rmckitri/research/australia.pdf.

[15] Indur Goklany, "Potential Consequences of Increasing CO_2 Concentrations Compared to Other Environmental Problems," *Technology* 7s (2000): 189-213.

GLOBAL WARMING SCIENCE

Universities and government institutions around the world are engaged in an enormous amount of scientific research on global climate change. This research involves not only the various specialized disciplines that study the atmosphere and the temperature record, but also solar physics, oceanography, botany, glaciology, paleo-climatology, and other related subjects. Yet the major impact of this research on the public policy debate over global warming does not come directly from the research itself. Instead, the United Nations' Intergovernmental Panel on Climate Change (IPCC) issues reports summarizing and interpreting recent climate research. The IPCC's official pronouncements are touted by the media and become part of conventional wisdom. The problem is that the IPCC is driven by political goals, which puts a consistent slant on everything it produces. Consequently, its public pronouncements are usually misleading and often inaccurate.

The IPCC Process

Over the past decade, the IPCC has prepared three Assessment Reports which summarize and evaluate the entire range of recent climate research. The Third Assessment Report (or TAR) was published in 2001 by Cambridge University Press in three huge volumes, one for each of the IPCC's three Working Groups (Science, Impacts, and Mitigation).[1]

Some months before the three Working Group reports received final approval, the IPCC prepared a brief "Summary for Policymakers" of each report. It is these three highly selective 15 to 20 page Summaries that largely inform the public policy debate over global warming.[2]

IPCC officials claim and media subsequently report that the Assessment Reports and their Summaries represent the consensus views of the hundreds of scientists who have contributed to the reports. This claim is false. Each chapter of an Assessment Report is written by a team of authors, consisting of a coordinating lead author, lead authors, and many contributing authors. Contributors are each responsible for a small section, as short as one or two pages. Contributors are not asked by the IPCC whether they agree with anything else in the Assessment Report beyond their own small sections.

Teams of 15 to 25 people consisting of chapter lead authors and other IPCC officials prepare the Summaries for Policymakers. Their drafts are edited and then approved by representatives of the national governments that comprise the IPCC. As such, the Summaries reflect the political agenda of the proponents of global warming alarmism and often slant the content in that direction. Such reports are responsible for many of the myths about the science of global warming. The following section discusses some of the key myths promoted by the IPCC Summary for Policymakers of the Third Assessment Report's Working Group 1 as well as some other common myths.

[1] J. T. Houghton et al., ed., *Climate Change 2001: The Scientific Basis: Contribution of Working Group I to the Third Assessment Report of the Intergovernmental Panel on Climate Change*, Cambridge, England: Cambridge UP, 2001. James J. McCarthy et al., ed., *Climate Change 2001: Impacts, Adaptation & Vulnerability: Contribution of Working Group II to the Third Assessment Report of the Intergovernmental Panel on Climate Change*, Cambridge, England: Cambridge University Press, 2001. Bert Metz, Ogunlade Davidson, Rob Swart and Jiahua Pan ed., *Climate Change 2001: Mitigation: Contribution of Working Group III to the Third Assessment Report of the Intergovernmental Panel on Climate Change*, Cambridge, England: Cambridge University Press, 2001.

[2] United Nations, *Summaries for Policymakers*, Working Group I, http://www.ipcc.ch/pub/spm22-01.pdf; Working Group II available at http://www.ipcc.ch/pub/wg2SPMfinal.pdf; Working Group III available at http://www.ipcc.ch/pub/wg3spm.pdf.

Myth: The Last Century Was the Warmest in a Millennium

The Third Assessment Report's Working Group 1 Summary includes a graph that shows nearly stable global mean temperatures for the first 900 years of the past millennium and then a sharp increase in temperature during the 20th century. This "hockey stick" graph is the basis of the frequent claim that the last century was the warmest in the past thousand years.

This assertion is based on only one scientific article that compiled and analyzed only one set of tree rings out of the numerous paleo-climate data sets available.[3] A wealth of research beginning with the father of modern climatology, Hubert H. Lamb, indicates that the Medieval Warm Period (from around 800 to 1200) was global and that global mean temperatures were higher than during the 20th century.[4] The hockey stick also fails to show the Little Ice Age from around 1300 to 1850. Much research suggests that the Little Ice Age was the coldest period since the end of the last Ice Age 11,000 years ago.[5] These errors in the hockey stick graph undermine the credibility of the claim that the 20th century was the warmest in the past millennium.

Myth: Global Warming Models Are Becoming More Accurate

Much of global warming theory is based on global warming computer models that have built-in assumptions about how various changes in the atmosphere could affect weather. These models have consistently failed to adequately predict changes in climate because limited knowledge inhibits the scientific community's ability to account for all possible factors. Regarding these models, the Third Assessment's Summary claims that:

- "Confidence in the ability of models to project future climate has increased. Understanding of climate processes and their incorporation in climate models have improved, including water vapour, sea-ice dynamics, and ocean heat transport."[6]

Yet Dr. Richard S. Lindzen, professor of meteorology at MIT and a lead author of Chapter 7 of the TAR, commented on this claim:

- "This statement summarizes a chapter which points out that all these things are done poorly, and that no model comes close to realistically depicting clouds. Moreover, clouds and water vapor are so intimately related that it is inconceivable that one would get water vapor right and clouds wrong. It also ignores that it is the behavior of water vapor and clouds (the atmosphere's main greenhouse substances) are responsible for model predictions of large warming. Increased CO_2 alone, will produce little warming (about 1 degree Celsius for a doubling of CO_2). This point is made in Chapter 7."[7]

[3] Michael E. Mann, Raymond S. Bradley, and Malcolm K. Hughes, "Northern Hemisphere Temperatures During the Last Millennium: Inferences, Uncertainties, and Limitations," *Geophysical Research Letters*, no. 26 (March 15, 1999): 759.
[4] H. H. Lamb, *Climate History and the Modern World* (New York: Routledge, 1985).
[5] Brian Fagan, *The Little Ice Age: How Climate Made History, 1300-1850* (New York: Basic Books, 2000).
[6] International Panel on Climate Change, United Nations, *Working Group I, Summary for Policymakers* (Geneva: IPCC, 2001), http://www.ipcc.ch/pub/spm22-01.pdf.
[7] Richard S. Lindzen, Cooler Heads Coalition Briefing (Washington, D.C.: Competitive Enterprise Institute, 1 March 2001). Significant research on water vapor and clouds published since completion of the TAR is Richard S. Lindzen, Ming-Dah Chou, and Arthur Y. Hou, "Does the Earth Have an Adaptive Infrared Iris?," *Bulletin of the American Meteorological Society* 82, March 2001.

Myth: Humans Are Key Cause of Warming

The IPCC Summary observes that the global mean temperature increased by three-tenths of one degree Celsius in the second half of the 20th century, and then it claims: "There is new and stronger evidence that most of the warming observed over the last 50 years is attributed to human activities."[8] This claim is contradicted by a report published in 2000 by the National Research Council (NRC) on *Reconciling Observations on Global Temperature Change*.[9] The NRC's special committee concluded that surface temperature data showing a three-tenths of a degree Celsius rise in the global mean temperature since 1975 was accurate, but so too was the satellite temperature record compiled by scientists John Christy and Roy Spencer.[10] Their satellite measurements show no significant increase in global mean temperature from 1979 to the present. Satellites measure temperatures in the lower troposphere. According to global warming theory, an increase in the greenhouse effect will first raise temperatures in the atmosphere, which will then warm the earth's surface. Therefore, the observed surface warming during the second half of the 20th century cannot plausibly be attributed to increasing greenhouse concentrations.

Myth: Global Temperatures Will Increase by 1.4 to 5.8 Celsius

According to the IPCC Summary, "The global average surface temperature is projected to increase by 1.4 to 5.8 degrees Celsius over the period 1990 to 2100. These results are for the full range of 35 SRES [Special Report Emission Scenario] scenarios, based on a number of climate models."[11] The Second Assessment Report predicted temperature rises in the range of 1 to 3.5 degrees Celsius over the next 100 years. The Summary of the Third Assessment Report reaches a much higher prediction of 5.8 degrees Celsius (or 10.4 degrees Farenheight) by concocting a completely implausible scenario consisting of the assumptions that the whole world will raise its level of economic activity to that of the United States, will equal U.S. per capita energy consumption, and energy use will continue to be carbon intensive. Footnote 11 to the IPCC Summary adds: "This range does not include uncertainties in the modeling of radiative forcing, e.g. aerosol forcing uncertainties."[12]

But the uncertainties regarding aerosol forcing[13] are so large as to make the predictions entirely unreliable. The IPCC does not assign probabilities to the range of predicted temperature increases. A study conducted by researchers at the Joint Program on the Science and Policy of Global Change at MIT concluded that "there is far less than a 1 in 100 chance of a global mean surface temperature increase by 2100 as large as 5.8 degrees Celsius." They also concluded that "there is a 12 percent chance that the temperature change in 2100 would be less than the IPCC lower estimate."[14] In other words, there is a 12 percent chance the climate change will be less than 1.4 degrees

[8] IPCC, *Working Group I, Summary for Policymakers*, 10.

[9] National Research Council, *Reconciling Observations of Global Temperature Change* (Washington, D.C.: NRC, 2000), http://bob.nap.edu/books/0309068916/html.

[10] See the Earth System Science Center, Dr. John Christy, Director, http://www.atmos.uah.edu/essl.

[11] *IPCC, Working Group I, Summary for Policymakers*, 13.

[12] Ibid.

[13] Aerosol forcing is one of the least understood areas of climate research. The IPCC's Second Assessment Report concluded that anthropogenic warming was being masked by sulfate aerosols, which have a cooling (that is, negative forcing) effect. More recently, it has been suggested that black carbon aerosols, such as soot, are a major positive (that is, warming) forcing agent. See Mark Z. Jacobson, "Strong Radiative Heating Due to the Mixing State of Black Carbon in Atmospheric Aerosols," *Nature* 409 (8 February 2001): 695-72. See also, James D. Hansen, Makiko Sato, Andrew Lacis, and Valdir Oinas, "Global Warming in the Twenty-First Century: An Alternative Scenario," *Proceedings of the National Academy of Sciences* 97, 9,875-80.

[14] Massachusetts Institute of Technology, Joint Program on the on the Science and Policy of Global Change, *Uncertainty Analysis of Global Climate Projections* (Cambridge, Mass: MIT, March 2001), http://web.mit.edu/globalchange/www/rpt73.html.

Celsius even using the highly questionable assumptions in the IPCC's computer models.

Myth: Sea Levels Will Rise Dramatically

Global warming doomsayers have long claimed that as the earth warms, the Antarctic and Greenland ice caps will melt, increasing sea levels. Some have predicted that the water will rise so high that coastal cities such as New York will soon become submerged in water.

Sea levels have been rising at varying rates since before the end of the last Ice Age 11,000 years ago — long before any manmade global warming is claimed to have begun. Sea levels will continue to rise until the next Ice Age begins as the Antarctic and Greenland Ice Sheets and glaciers continue to melt. Sea level rise over short periods is extremely difficult to determine, but it is believed that the rate of sea level rise has not increased over the past century when manmade global warming is claimed to have occurred. Future global warming may cause the rate of sea level rise to increase due to the thermal expansion of water and faster melting of the ice sheets.

Fortunately, if there is a sea level rise, we will be able to address associated problems. A report by the Pew Center on Climate Change, a booster group for energy suppression policies, estimated that the cost of rising sea levels for the United States would total $20 to $150 billion over the next 100 years.[15] This is less than Americans currently spend on cat food per year ($4 billion).[16] But more importantly, the estimated costs of mitigating a potential sea rise are hundreds of times less than estimated costs of global warming policies. The Kyoto Protocol cost estimates to the United States range from $225 to $400 billion annually, and the Protocol will do little to slow the rate of predicted global warming.[17]

Myth: Global Warming Will Produce More Storms

Another warning is that global warming will cause more frequent or more intense severe weather events, such as hurricanes, droughts, and floods. There is no scientific basis to support this claim. Dr. William Gray, a Colorado State University scientist and one of the world's foremost hurricane experts, does not believe that global warming is affecting hurricanes: "It sure as hell ain't global warming," he bluntly noted on MSNBC.[18]

That severe weather events are becoming more common is based on the rise of 24-hour television news cable channels and consequent increased television coverage of weather disasters. The claim that damages caused by hurricanes have increased is misleading. Insurance claims for hurricane damage have increased because the number and value of buildings in hurricane-prone areas such as Florida has increased dramatically. Moreover, insurance claims have not increased as a percentage of gross domestic product.[19]

Myth: Global Warming Will Produce More Tropical Diseases

Global warming scaremongers also claim that climate changes will increase tropical diseases,

[15] James Neumann, Gary Yohe, Robert Nicholls, and Michelle Manion, *Sea Level Rise & Global Climate Change: A Review of Impacts on U.S. Coasts* (Arlington, Va.: Pew Center on Global Climate Change, February 2000), http://www.pewclimate.org/projects/env_sealevel.cfm.
[16] Erin Murphy, "Corn Chips, Kibble or Cat Food," *Cats Magazine*, July 2001, http://www.catsmag.com/July2001/feature.html.
[17] See brief "Kyoto Protocol" in this book.
[18] Miguel Llanos, "Humans and Hurricanes Too Simplistic," MSNBC, 10 January 1998, http://www.msnbc.com/news/106343.asp.
[19] Tillinghast-Towers Perrin Inc., "Towers Perrin Hurricane Study Refutes Claims That Global Warming Caused Increased Catastrophic Hurricane Damages," Press Release, http://www.towers.com/towers_news/news/press/news_frame_towers.asp?target=../PressRelease_2001/pr071101.htm.

bringing them into non-tropical areas. But the fact that such diseases are not common in the Western world now has nothing to do with climate. Instead, as Western nations grew wealthier, we developed measures to protect against the disease carrying insects and other vectors.[20] Such measures include the use of tightly enclosed homes with screens and air conditioning (keeping bugs out) and vector control, including the use of pesticides.

In fact, before such measures were implemented, so-called "tropical diseases" such as malaria and dengue fever were common during the Little Ice Age in cities as far north as Washington, New York City, Toronto, London, and Stockholm. They were eradicated or controlled in these areas by public health measures and vector control. Major research by Dr. Paul Reiter of the U.S. Centers for Disease Control and Prevention concludes that potential global warming will not increase the frequency or range of these diseases.[21] However, these diseases are still common in many poor tropical and sub-tropical countries because of the lack of adequate public health establishments, and because they lack the wealth that enables those in the Western world to avoid contact with disease-carrying organisms.

What is the Greenhouse Effect?

The greenhouse effect should not be confused with anthropogenic (human-caused) global warming. Instead, the greenhouse effect is a natural process that keeps the Earth warm enough to sustain life. Certain gases in the atmosphere (conveniently called greenhouse gases) trap some incoming solar radiation, which in turn warms the earth's surface. Most of the heat trapped by the greenhouse effect is stored in the oceans rather than in the atmosphere.

The principal greenhouse gas is water vapor (which includes clouds). Water vapor constitutes more than 95 percent of total greenhouse gases. Trace greenhouse gases include carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF_6). Water vapor is not included in the UN Framework Convention on Climate Change and Kyoto Protocol because the *direct* human impact on the amount of water vapor in the atmosphere is thought to be insignificant. All the trace greenhouse gases are covered by the Kyoto Protocol, but the principal focus is on reducing carbon dioxide emissions.

Carbon dioxide is a naturally-occurring, tasteless, odorless gas. Plants require carbon dioxide for photosynthesis. Animals produce CO_2 when they oxidize nutrients and exhale. At the beginning of the Industrial Revolution in the early 19th century, the Earth's atmosphere contained approximately 280 parts per million (ppm) of CO_2. As a result of burning hydrocarbons (coal, petroleum, and natural gas), CO_2 levels have risen to approximately 370 ppm today.[22]

The pre-industrial CO_2 level of 280 ppm should not be taken as the normal or preferred level or the natural background level. CO_2 concentrations have fluctuated widely over geologic time. Recent research by Dr. Gregory J. Retallack indicates that CO_2 levels have fluctuated between 1,000 and 2,000 ppm over most of the past 300 million years and have only rarely declined to the current level.[23]

[20] Public health officials have raised concerns about expansion of infectious diseases. However, rather than global warming, they warn that government regulation of pesticides is hindering their ability to control the insects, rodents, and other vectors that transmit such disease. In addition to regulatory impediments to control, an increase in infectious diseases has grown with the expansion of international travel and trade, which enables disease to migrate along with travelers and cargo. For more information on this topic see "Pesticides and Public Health" in *The Environmental Source.*

[21] Paul Reiter, "Climate Change and Mosquito Borne Disease," *Environmental Health Perspectives* 109, Supp. 1, (March 2001), http://ehpnet1.niehs.nih.gov/docs/2001/suppl-1/141-161reiter/abstract.html; see also Paul Reiter, "Global Warming And Vector-Borne Disease: Is Warmer Sicker?" Cooler Heads Briefing (Washington, D.C.: Competitive Enterprise Institute, 28 July 1998), http://www.cei.org/CHBReader.asp?ID=539.

[22] For a more detailed description see Kenneth Green, *A Plain English Guide to Climate Change* (Los Angeles: Reason Public Policy Institute, August 2000), http://www.rppi.org/environment/peg3.html.

[23] Gregory J. Retallack, "A 300-Million Year Record of Atmospheric Carbon Dioxide from Fossil Plant Cuticles," *Nature* (17 May 2001): 287-289.

Myth: The Impacts of Global Warming Are All Negative

Global warming alarmism depends on the belief that the effects of human-caused climate change must be entirely bad. However, ecologists and economists are rapidly discovering that global warming could bring both beneficial and harmful effects. According to Yale University Professor Robert Mendelsohn, there has been a:

> "[N]ear revolution that has occurred over the past decade in our understanding of the impacts of climate change …The new research suggests that climate warming will not be as harmful as we once thought it might be …The reduction in damage-estimates removes the urgency to engage in costly crash abatement programs. Our initial perspective on greenhouse gases suggested that we were rapidly approaching the edge of a cliff. Those fears now appear unfounded, for the impacts from climate warming seem to be relatively small for the next century … These changes [in our understanding of climate change] are so dramatic that it is not clear whether the net economic effects from climate change over the next century will be harmful or helpful."[24]

The most certain effect of rising carbon dioxide levels in the atmosphere is not global warming, but increased plant growth — leading to higher agricultural yields and more food to feed the world and greater biodiversity. Plants require carbon dioxide for photosynthesis. Most classes of plants developed when CO_2 levels were much higher than today. Hundreds of experiments conducted over the past half century have demonstrated increased plant growth with higher CO_2 levels.[25] The pre-industrial CO_2 level is not necessarily the normal or preferred level.[26]

— Myron Ebell

Key Experts

Myron Ebell, CEI, (202) 331-1010, mebell@cei.org.
Paul J. Georgia, CEI, (202) 331-1010, pgeorgia@cei.org.
Christopher C. Horner, CEI, (202) 331-1010, chorner@cei.org.

Recommended Readings

Baliunas, Sallie L. and Willie Soon. *Increasing Carbon Dioxide and Global Climate Change*. Washington, D. C.: George C. Marshall Institute, http://www.marshall.org/baliunasweeds.htm.

Cooler Heads Newsletter. Current and back issues are located at www.globalwarming.org.

[24] Robert Mendelsohn, *The Greening of Global Warming* (Washington, D.C.: American Enterprise Institute, 1999).
See also Robert Mendelsohn and James E. Neumann, *The Impact of Climate Change on the United States Economy* (Cambridge: Cambridge University Press, 1999).

[25] Sylvan Wittwer, *Food, Climate, and Carbon Dioxide* (Boca Raton, FL: CRC Press), 1995. See also Sherwood Idso, *CO_2 and the Biosphere: The Incredible Legacy of the Industrial Revolution* (St. Paul, MN: University of Minnesota Press, 1995). A wealth of information on current research can also be found in *CO_2 Science Magazine*, http://www.co2science.org.

[26] See text box: "What is the Greenhouse Effect?"

Davis, Robert W. and David Legates. "How Reliable Are Climate Models?" Cooler Heads Coalition Briefing. Washington, D.C.: Competitive Enterprise Institute, 5 June 1998, http://www.cei.org/CHBReader.asp?ID=471.

Georgia, Paul. "Latest Global Warming Report Already Obsolete," *CEI On Point #81*. Washington, D.C.: Competitive Enterprise Institute,16 May 2001, http://www.cei.org/OnPointReader .asp?ID=1477.

Adler, Jonathan, editor. *The Costs of Kyoto*. Washington, D.C.: Competitive Enterprise Institute, 1997, htpp://www.cei.org/costofkyoto2001.html.

Lindzen, Richard S. "Global Warming: The Origin and Nature of the Alleged Scientific Consensus." *Regulation* 15, no. 2 (1992), http://www.cato.org/pubs/regulation/reg15n2g.html.

Mendelsohn, Robert. *The Greening of Global Warming*. Washington, D.C.: The American Enterprise Institute Press, 1999.

Michaels, Patrick J. and Robert C. Balling Jr., *The Satanic Gases*. Washington, D.C.: Cato Institute, 2000.

Moore, Thomas G. *Climate of Fear: Why We Shouldn't Worry About Global Warming*. Washington, D.C.: Cato Institute, 1998.

Singer, Fred S. *Hot Talk, Cold Science: Global Warming's Unfinished Debate*. Oakland, Calif.: The Independent Institute, Revised Edition, 1999.

Reinstein, Robert. "Emission Credits: The Supply and Demand Gap." Cooler Heads Coalition Briefing. Competitive Enterprise Institute. 23 October 1998, http://cei.org/CHBReader.asp?ID=508.

Reiter, Paul. "Global Warming And Vector-Borne Disease: Is Warmer Sicker?" Cooler Heads Coalition Briefing. Washington, D.C.: Competitive Enterprise Institute, 28 July 1998, http://www.cei.org/CHBReader.asp?ID=539.

Spencer, Roy. "How Do We Know the Temperature of The Earth." In *Earth Report 2000*. Edited by Ronald Bailey, 23-39. New York: McGraw-Hill, 2000.

World Climate Report Newsletter, http://www.greeningearthsociety.org/climate.

AUTOMOBILE FUEL ECONOMY STANDARDS

The federal government's new car fuel-economy standards are a prime example of a program whose unintended side effects far outweigh its regulatory goals. The program, popularly known as CAFE (Corporate Average Fuel Economy), was enacted in 1975 in the wake of the Middle East oil shocks. Its purpose was to reduce our consumption of gasoline and dependence on foreign oil by regulating the fuel efficiency of new cars.

CAFE has increased the fuel economy of new cars, though not to the extent claimed by its proponents. Nonetheless, its impact on overall gasoline consumption has been minimal because of a number of offsetting factors. By restricting the availability of large passenger cars, CAFE has boosted consumer demand for even less fuel-efficient vehicles such as vans and sport utility vehicles (SUVs). Moreover, higher fuel efficiency itself tends to stimulate more driving by reducing the cost of additional mileage.

Its most notable effect, however, is one that its proponents tend to avoid confronting. By causing new cars to be downsized (cars are smaller and lighter than they otherwise would be), CAFE makes such cars less crashworthy. The end result is that CAFE has increased traffic fatalities by 2,000 or more deaths per year.[1]

The goal of reducing gasoline consumption is itself highly questionable. People derive benefits from using natural resources. In the case of gasoline and vehicle use, mobility allows us to better structure our lives. It gives us flexibility in choosing our communities and our jobs, and it aids us in handling our family and professional responsibilities. So long as the price we pay for gasoline at the pump is not subsidized by government, any attempt to restrict our mobility should be subject to serious question. And if government *is* going to restrict gasoline consumption, then higher gasoline taxes are the most politically honest way of doing so, since their magnitude is readily apparent to the public. CAFE's effects, on the other hand, are relatively invisible. That is what makes the program so attractive to politicians and regulatory advocates, and so dangerous for the public at large.

Background

CAFE established an initial series of congressionally mandated fuel-economy standards for the new-car fleet through 1980, with an eventual goal of 27.5 mpg for 1985. It authorized the Department of Transportation (DOT) to set the standards for intervening and subsequent years, and also to establish fuel-economy standards for light trucks. The current new-car standard has remained at 27.5 mpg since the 1990 model year; for light trucks (which include vans and SUVs), the standard is 20.7 mpg. These standards must be met by every carmaker's sales of new vehicles within a given model year. Individual cars and light trucks can fall below the standard, but they must be offset by a carmaker's sales of other vehicles that exceed the standard.

The Clinton administration generally favored higher CAFE standards, but a series of congressional appropriations freezes kept DOT from raising them. The Bush administration, on the other

[1] The foremost analysis of this issue can be found in R. W. Crandall and J. D. Graham, "The Effect of Fuel Economy Standards on Automobile Safety," *Journal of Law and Economics* 32 (April 1989): 97-118. For other analyses that come to similar conclusions, see National Highway Traffic Safety Administration, *Relationship of Vehicle Weight to Fatality and Injury Risk in Model Year 1985-93 Passenger Cars and Light Trucks* (Washington, D.C.: NHTSA, April 1997); "Death by the Gallon," *USA Today,* 2 July 1999, Section B. For an application of the Crandall-Graham analysis to recent traffic statistics, see Julie DeFalco, *The Deadly Effects of Fuel Economy Standards* (Washington, D.C.: Competitive Enterprise Institute 1999), http://cei.org/MonoReader.asp?ID=761.

hand, is unlikely to push for significantly higher CAFE standards. Nonetheless, arguments concerning oil consumption and its relationship to the alleged global warming crisis make it likely that CAFE will continue to be a highly contentious issue.

Much of the debate in recent years has centered on the appropriate levels that CAFE standards should reach. The real issue, however, is the wisdom of the CAFE program itself. As the following reasons indicate, CAFE's underlying premises are in need of basic reconsideration.

CAFE Does Not Reduce Gasoline Consumption

Since the passage of CAFE standards, the fuel efficiency of new cars has nearly doubled. Much of this increase, however, is due not to CAFE but to the auto market's response to rising oil prices. In the years immediately following CAFE's enactment, new-car fuel economy increased to levels even higher than those required by statute, as consumers, faced with steadily rising gasoline prices, demanded far more fuel-efficient cars than they had in the past. It was only in the mid-1980s and later, when gas prices first stabilized and then began to actually decline, that CAFE itself exerted a real effect on car design and on the mix of models available. The drop in gas prices, however, meant that conservation itself had become a less pressing need.

While CAFE did force changes in the new car fleet, many of its effects actually *increased* fuel consumption. CAFE's restriction of large cars caused consumers to hang on to their older, less efficient cars for longer periods of time. Because consumers were limited in their new-car choices, demand for larger vehicles such as vans, minivans, and SUVs was boosted. These vehicles, which were subject to the less stringent light-truck CAFE standard, often were less fuel-efficient than the cars they replaced. Finally, because fuel efficiency reduces the costs of driving, CAFE itself encourages people to drive more.

CAFE Increases Traffic Fatalities

Vehicle downsizing is one of the most powerful means to increase fuel economy. Downsized vehicles, however, are less crashworthy than similarly-equipped large cars in practically every type of accident. The end result is that CAFE increases highway fatalities. A 1989 Harvard-Brookings study calculated that CAFE's 500-pound downsizing effect on new cars caused a 14 percent to 27 percent increase in occupant fatalities — 2,200 to 3,900 additional deaths per year. A DOT study came to a similar conclusion, while a 1999 *USA Today* analysis put CAFE's cumulative death toll at 46,000.[2]

Ironically, CAFE is administered by the National Highway Traffic Safety Administration (NHTSA), a unit of DOT. Despite the fact that its middle name is safety, NHTSA has failed to assess the safety effect of this program. In 1989, a federal appeals court, ruling in *CEI and Consumer Alert v. NHTSA*, found that the agency had engaged in "decisional evasion" and "statistical legerdemain."[3]

Proponents of higher CAFE standards argue that new technologies have replaced downsizing as means of enhancing fuel economy. CAFE, however, imposes a safety trade-off on cars regardless of how technologically sophisticated they may be. Take the most high-tech car imaginable. If you make it larger and heavier, the car you end up with will be safer than the one you started with, but it also will be less fuel-efficient. Because CAFE prevents such cars from being "upsized," it continues to impose its lethal effect.

[2] *USA Today*, "Death by the Gallon."

[3] *Competitive Enterprise Institute and Consumer Alert v. National Highway Traffic Safety Administration*, 956 F.2d 321 (D.C. Cir. 1992).

CAFE Standards Do Not Reduce Automobile Emissions

Proponents of higher CAFE standards claim that they will reduce the threat of global warming. Fuel-efficient cars do emit less CO_2 per mile traveled, but this effect will be diminished by CAFE's stimulus to increased driving. Moreover, new vehicles constitute a miniscule source of overall CO_2 emissions. Finally, as explained elsewhere in this book, the evidence in support of a global warming threat is very speculative.

As for pollutants, all vehicles are subject to the same Environmental Protection Agency emissions standards in terms of allowable grams-per-mile. In this respect, high fuel-economy and low fuel-economy cars perform the same. More important, most vehicle emissions come not from new cars but from older ones. Because CAFE results in these cars being kept on the road even longer, the end result may well be more, rather than less, air pollution.

CAFE Does Little to Reduce Foreign Oil Dependence

Despite CAFE, oil imports currently account for 50 percent of U.S. oil supplies, as compared to 35 percent in 1975.[4] America's dependence on foreign oil is essentially determined not by the fuel economy of our cars, but by world oil prices. Our domestic oil sources are relatively high-cost in nature. When world oil prices are low, the United States will tend to increase its imports of low-cost foreign oil. If Congress wishes to reduce such imports (a goal whose wisdom is itself debatable), the best way to do so is to eliminate the extensive federal restrictions on domestic oil exploration and development.

— Sam Kazman

Key Experts

Sam Kazman, CEI, (202) 331-1010, skazman@cei.org.

Recommended Readings

De Falco, Julie. "CAFE's Smashing Success." *CEI UpDate*, July 1997, http://www.cei.org/UpdateReader.asp?ID=187.

DeFalco, Julie. *The Deadly Effects of Fuel Economy Standards.* Washington D.C.: Competitve Enterprise Institute, 1999, http://cei.org/MonoReader.asp?ID=761.

Georgia, Paul. "The Myths and Realities of Oil Dependency." Published on editorialnetwork.com, Week of 9 October 2000, http://www.cei.org/OpEdReader.asp?ID=1234.

Kazman, Sam. "Punish Ford-Firestone, but Don't Reward the NHTSA." *Wall Street Journal*, 12 September 2000, http://www.cei.org/OpEdReader.asp?ID=1185.

Kemp, Jack. "Closing Down the Hard Times CAFE." *CEI On Point.* Washington, D.C.: Competitive Enterprise Institute, 18 August 1999, http://www.cei.orgOnPointReader.asp?ID=812.

[4] Office of Oil and Gas, U.S. Energy Information Administration (EIA), *Oil Market Basics*: *A Primer on Oil Markets Combined with Hotlinks to Oil Price and Volume Data Available on the Internet* (Washington, D.C.: EIA, 2001), http://www.eia.doe.gov/pub/oil_gas/petroleum/analysis_publications/oil_market_basics/default.htm.

HOME APPLIANCE EFFICIENCY STANDARDS

Almost everything around the house that uses energy or water is regulated by the federal government. The National Appliance Energy Conservation Act of 1987 empowered the Department of Energy (DOE) to set energy efficiency standards for 14 home appliances,[1] including refrigerators, air conditioners, water heaters, clothes washers and dryers, ovens, and dishwashers. Adding to this burden, the Energy Policy Act of 1992 set water efficiency standards for toilets, showers, and faucets.

Many of these standards have raised the cost and compromised the performance and reliability of affected products, while providing only modest energy or water savings. Most notable are the problems surrounding new toilets, which now must use no more than 1.6 gallons per flush, less than half the water of most pre-standard models. Owners of these water-stingy toilets complain that they "clog easily and overflow often" and that "multiple flushes are needed to clear the bowls of low-flow toilets, which could negate the intended water savings."[2] The consumer backlash against low-flush toilets led to a bill to repeal the federal standard, the first such effort of its kind.[3]

DOE has broad authority to periodically tighten existing standards. The agency is working on its second or even third round of successively stricter standards for many appliances, and each new rule seems to make less sense than the previous rule. This effort includes new standards that, according to DOE estimates, are going to result in:

- $80 increase in the price of refrigerators,[4]
- $249 increase in the price of clothes washers,[5] and
- $335 increase in the price of central air conditioners.[6]

DOE enacted the new standard for central air conditioners despite the agency's own calculations showing that the substantially higher cost will not be earned back in the form of reduced energy bills. Under almost every set of assumptions used by DOE, more consumers will experience net costs than net benefits, with low-income households faring the worst.[7] The new clothes washers will not only increase the purchase price, but may also limit product choice.[8]

To protect American consumers from the harmful effects of excessive appliance efficiency regulations, Congress needs to take a more aggressive oversight role regarding new DOE standards and perhaps use its authority under the Congressional Review Act to invalidate those standards detrimental to the interests of American consumers.

— Ben Lieberman

[1] 42 U.S.C. §§ 6291 to 6317.
[2] National Association of Home Builders Research Center, "Water Closet Survey — June 1999" (Washington, D.C.: National Association of Homebuilders, 1999), http://www.nahbrc.org.
[3] The Plumbing Standards Improvement Act, H.R. 623 (106th Cong.), 1999.
[4] Department of Energy Press Release, "DOE Facts: Refrigerator Energy Efficiency Standards," 23 April 1997.
[5] *Federal Register* 66 (12 January 2001): 3,315.
[6] *Federal Register* 66 (22 January 2001): 7,171.
[7] *Federal Register* 65 (5 October 2000): 59,590, 59,619.
[8] *Federal Register* 66 (12 January 2001): 3,314; Ben Lieberman, "The Regulatory Spin Cycle," *The Weekly Standard, 12* November 2000, 17-18.

Key Experts

Ben Lieberman, CEI, (202) 331-1010, blieberman@cei.org.
Glenn Schleede, Energy Market & Policy Analysis, Inc., (703) 709-2214, EMPAInc@aol.com.

Recommended Readings

Dudley, Susan. *Clothes Washer Energy Conservation Standards-Addendum.* Arlington, Va.: Mercatus Center, 27 November 2000. RSP Comment 2000-23, http://www.mercatus.org.

Lieberman, Ben. "Wasting Energy on Energy Efficiency." *The Freeman* (April 1999): 18-21.

Lieberman, Ben. "The Regulatory Spin Cycle." *The Weekly Standard*, 13 November 2000, 17-18.

Lieberman, Ben. "Toilets on the Potomac." *The American Spectator*, January 2000, 70-71.

Vaughn, Garrett. *Clothes Washer Energy Conservation Standards.* Arlington, Va.: Mercatus Center, 22 November 2000. RSP Comment 2000-22, http://www.mercatus.org.

Vaughn, Garrett. *Energy Conservation Standards for Residential Central Air Conditioners and Heat Pumps.* Arlington, Va.: Mercatus Center, 4 December 2000. RSP Comment 2000-24, http://www.mercatus.org.