44. Global Warming

Congress should pass a resolution directing the president to submit a letter to the United Nations Secretariat withdrawing the United States from the Framework Convention on Climate Change.

The United Nations Framework Convention on Climate Change (FCCC) and the subsequent Kyoto Protocol to that convention represent the largest potential surrender of national sovereignty ever faced by the United States. The treaty and the protocol are based on a naive interpretation of immature science. The economic costs of the treaty and protocol are enormous. And even if all the world's nations met their commitments to the Kyoto Protocol, there would be no discernible effect on the globe's climate.

Background

The Framework Convention was signed by the United States at the Rio de Janeiro Earth Summit in 1992. As originally conceived, the purpose of the treaty was ''to prevent dangerous human interference in the climate system.'' The original goal of the treaty was to reduce emissions of carbon dioxide, the principal human ''greenhouse'' gas, to 1990 levels by the year 2000. Only two nations will meet that goal, and they will do so because of historical accidents. In 1990 the unification of Germany resulted in the absorption of the wildly polluting East, whose economic inefficiency was so great that much of its industry was simply shut down. Great Britain will meet the target because of privatization of the coal industry.

Carbon dioxide emissions in the United States have risen approximately 15 percent since 1990. But at Kyoto in December 1997 the Clinton administration, under the leadership of Vice President Gore, agreed to a protocol to the FCCC that requires us to reduce our emissions 7 percent *below* 1990 levels over the averaging period, 2008–2012. Because of recent increases in emissions, this constitutes a reduction of between 30

and 40 percent (depending on whether the increase since 1990 is assumed to be exponential or merely linear) beneath where they would be under a ''business as usual'' scenario. That ''business as usual'' has resulted in the greatest explosion in wealth creation in the history of the United States.

The next meeting of the Conference of the Parties to the FCCC took place in Buenos Aires in November 1998. The purpose of the Buenos Aires meeting was to write a further amendment to the Kyoto Protocol that would make it legally binding upon the signatories. Ultimately, the participants agreed to defer that decision until 2000.

''Legally binding'' means simply this: If the Kyoto Protocol is ratified by the Senate, the United States will have agreed to allow the United Nations to use any mechanism, including economic sanctions, to punish us if we do not meet the reductions agreed to in Kyoto.

The Climate Models That Served as the Basis for the FCCC Were Wrong

The head of the United Nations Intergovernmental Panel on Climate Change, Robert Watson, said exactly that at a hearing held by the House Small Business Committee on July 29, 1998.

The FCCC is the first computer-based treaty ever entered into by the community of nations. It is based on ''general circulation models'' (GCMs), which are large-scale simulations of the globe's climate that have been used as research and teaching tools for two decades. By 1990 there were five GCMs that received the bulk of scientific citations. On average, they predicted that a doubling of atmospheric carbon dioxide would cause the earth to warm by 7.6 degrees Fahrenheit some time late in the next century.

Those models drove the first ''consensus'' document on this subject, the United Nations' ''First Scientific Assessment,'' published in 1990 by the UN's Intergovernmental Panel on Climate Change (IPCC). The key sentence in that report concerning predicted and observed climate change said, ''When the latest atmospheric models are run with the present concentrations of greenhouse gases, their simulation of climate is generally realistic on large scales.''

In other words, computer models of the climate produced climate changes that generally resembled what had been observed. A subsequent study by the United Kingdom Meteorological Office calculated that those models predicted that the earth's mean surface temperature should have risen between 2.3°F and 4.1°F in the last century or so.

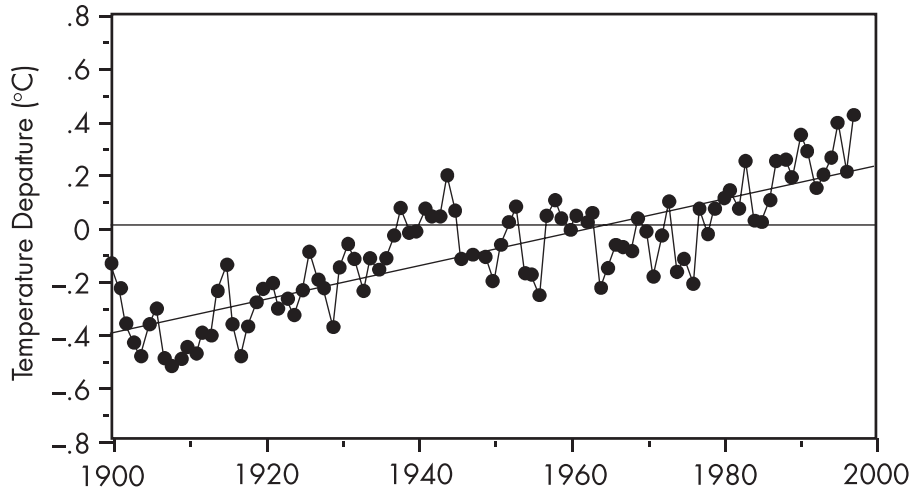
In fact, the observed surface warming since the late 19th century has been about 1.1°F, or one-third of the predicted average. And at least one-half of the warming occurred before 1940, which makes it unlikely to be a result of human activity. The history shown in Figure 44.1 was compiled from a number of different types of sensors or stations, and it is *not* global, with little data from north or 60° N and south of 45° S.

Two other more standardized temperature histories are commonly cited when discussing climate change: the Microwave Sounding Unit (MSU) satellite record first published by NASA scientist Roy Spencer and the record of lower atmospheric temperature taken by the global weather balloon network.

The satellite record, which has recently been corrected by NASA for orbital decay and other slight drifts, shows no statistically significant warming whatsoever in the 20 years that it has been operational. As shown in Figure 44.2, though, the rather pronounced (and clearly temporary) warming caused by the large and recent El Niño appears rather dramatically.

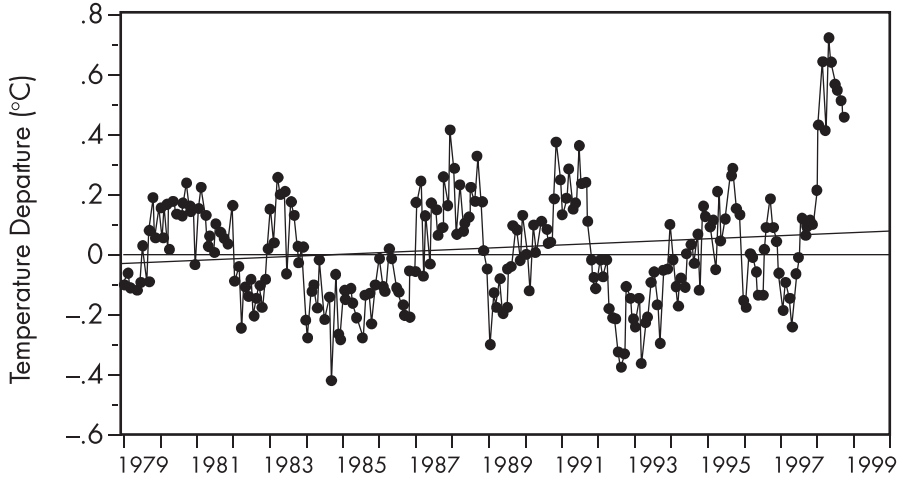
The weather balloon record verifies that the satellite is correct. The correspondence between annual temperatures measured by balloons and

Figure 44.1
Surface Temperatures Measured by the IPCC



SOURCE: *Climate Change 1995* (and updates), Intergovernmental Panel on Climate Change, United Nations.

Figure 44.2
Monthly Satellite-Measured Temperatures through September 1998



SOURCE: NASA.

the satellite (Figure 44.3) is truly striking in the lower atmosphere (the layer between 5,000 and 30,000 feet).

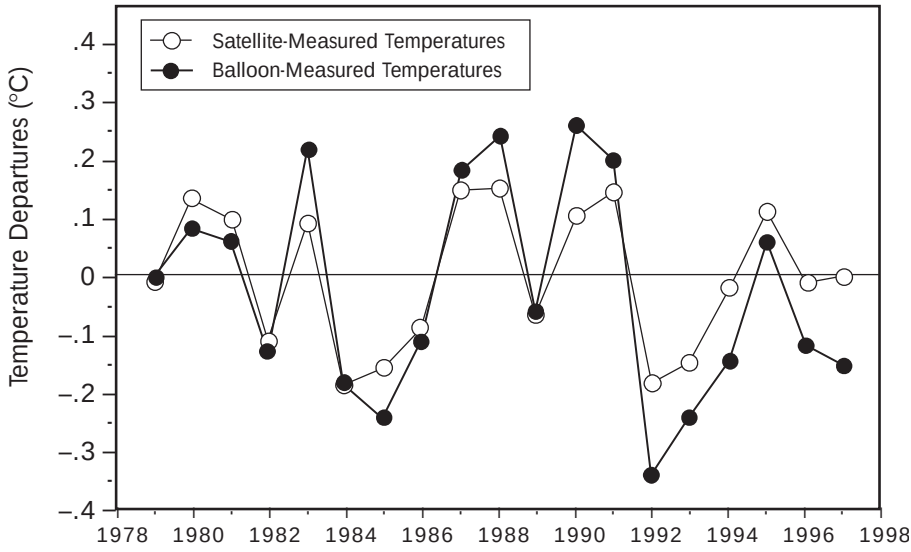
An example of the magnitude of the error can be seen by examining a typical GCM projection used by the FCCC. This one was made by NASA scientist James Hansen in 1988 and served as the basis for many hysterical statements about climate change at that time. He predicted that global temperature between 1988 and 1997 would rise by 0.8°F, or 0.45 degree Celsius. Figure 44.4 compares this to the temperature changes observed by the three independent sources.

A typical model used in the FCCC predicted a warming of 0.45°C in the last decade. Comparison with the different temperature records shows that the forecast was in error. Two of the three records actually show cooling.

Ground-based temperatures from the IPCC show a rise of 0.2°F, or four times less than Hansen predicted. Lower atmosphere temperatures measured by ascending thermistors on weather balloons show a decline of 0.65°F, and satellites measuring the same layer (our only truly global measure) show a decline of 0.43°F.

The forecast made in 1988 was an astounding failure, and IPCC's 1990 statement about the ''realistic'' nature of those projections was simply wrong.

Figure 44.3
Satellite and Weather Balloon Temperatures



SOURCES: NASA and NOAA.

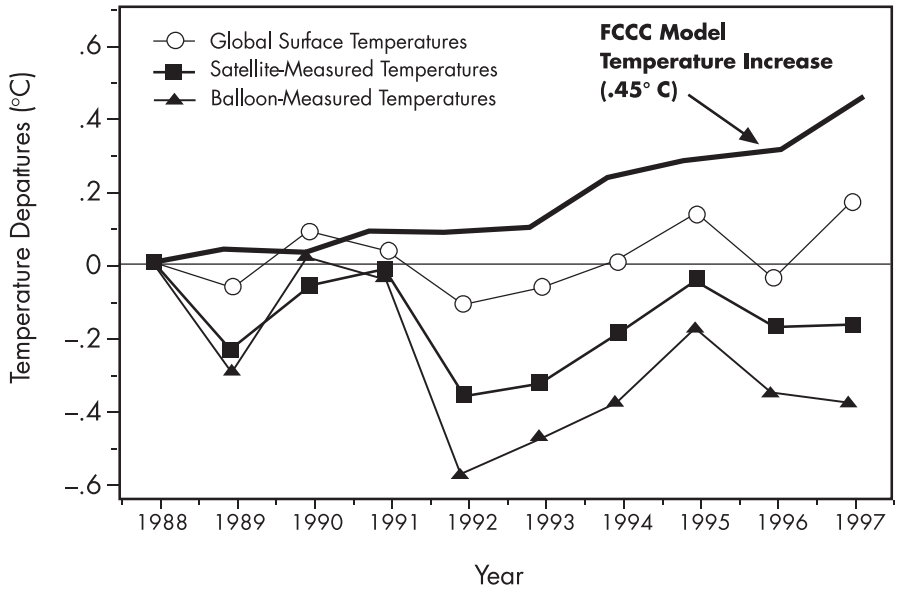
''Global'' Warming Is Largely a Warming of Frigid Winter Air Masses

Those who promote the gloom-and-doom scenarios for global warming conveniently neglect the physical fact that changing the atmosphere's greenhouse effect *must* warm up the *coldest, driest* air masses much more than the warm moist air of summer. This is basic atmospheric physics known to any student of this issue.

In fact, all three of the independent measures of temperature—ground based, satellite, and weather balloon—show that ''global warming'' is a misnomer; more than anything else it is a warming of the coldest air masses in the dead of winter, just as is predicted by physics and just as is ignored by agenda-driven global warming ideologues.

A team of well-known climatologists recently examined surface temperature records since 1945 and found that warming was largely confined to the coldest winter air masses, in agreement with the satellite data. A warming of the coldest, driest air masses is, by definition, a relative warming of the nights compared to the days. And, by extension, this is the type of climate change that slightly lengthens the growing season, as

Figure 44.4
Comparison of FCCC Model's Temperatures and Records of Actual Temperature



SOURCES: James Hansen, NASA; NASA; NOAA.

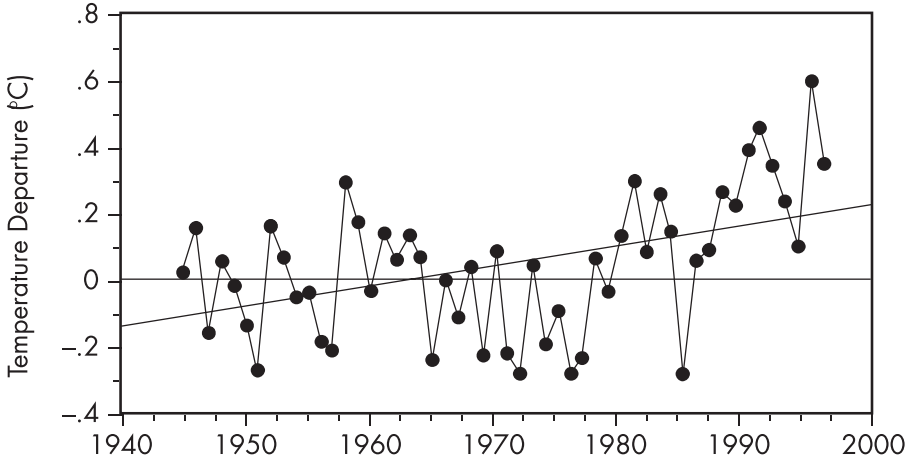
the coldest temperatures occur at night. Scientists at Boston University recently found evidence of a lengthening of the growing season in the world's cold regions.

Figure 44.5 shows the overall postwar winter warming of the Northern Hemisphere, where station locations are more representative of a true temperature than are those of the sparsely instrumented Southern Hemisphere.

Figure 44.6 shows the remaining change after the winter warming of Siberia and northwestern North America is removed. *The warming trend disappears*. Obviously, the warming of those frigid places is what characterizes winter climate change in the entire hemisphere since World War II.

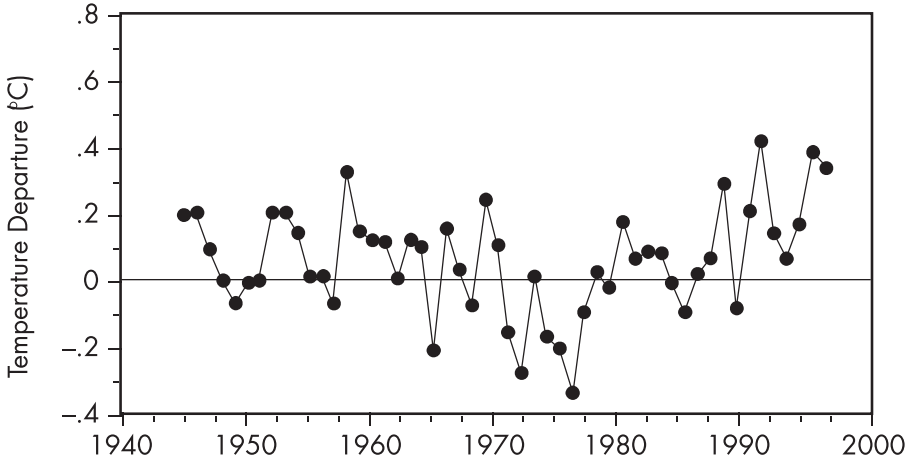
In summary, the planet has warmed at a rate far less than predicted by computer models that served as the basis for the Framework Convention, and it has warmed in a fashion that is generally beneficial to mankind.

Figure 44.5
Winter Temperatures in the Northern Hemisphere



Data from the IPCC.

Figure 44.6
Winter Temperatures in the Northern Hemisphere Excluding Siberia and Northwestern North America



Explaining the Failed Models

Global warming alarmists, as well as the IPCC, now acknowledge the failure of the FCCC models. The explanation often given is that another human emission—sulfate aerosol (the main precursor of acid rain)—is responsible for the lack of warming. Sulfates form a finely divided white haze that reflects away solar radiation (thereby mitigating warming), and they also brighten existing clouds, reflecting away even more of the sun's rays. Sulfates are almost all produced in the industrial Northern Hemisphere, and they last in the atmosphere only a few days; there are relatively few sulfates in the atmosphere of the Southern Hemisphere.

By 1995, in its second full review of climate change, the IPCC changed its statement about model ''realism'': ''When increases in greenhouse gases only are taken into account . . . most [climate models] produce a greater mean warming than has been observed to date, unless a lower climate sensitivity [to the greenhouse effect] is used. . . . There is growing evidence that increases in sulfate aerosols are partially counteracting the [warming] due to increases in greenhouse gases.''

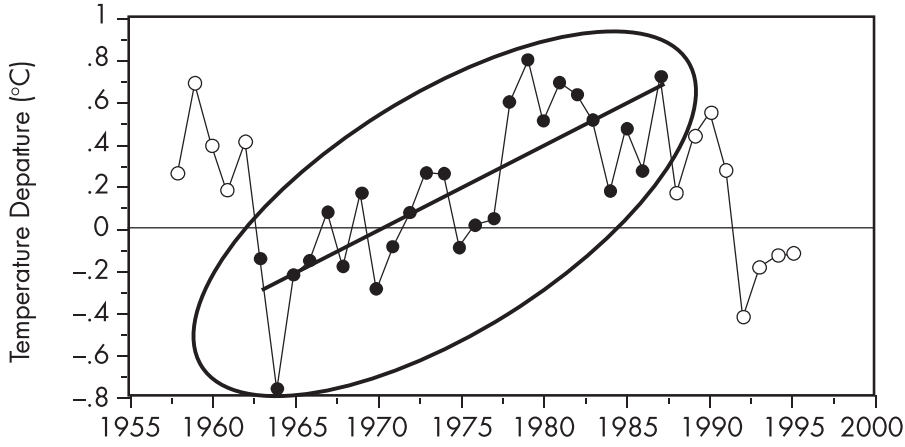
The IPCC is presenting two alternative hypotheses: Either the base warming was simply overestimated, or some other industrial emission is preventing the warming from occurring. The IPCC, however, omitted a third possible source for the error: Perhaps the greenhouse gases have not been increasing at the projected rate.

The sulfate explanation has received considerable attention from the research community. Initial results, particularly those published in *Nature* on July 4, 1996, by Department of Energy scientists, appeared to bolster the argument that the sulfates were masking the expected warming. That particular study used annual weather balloon data from 1963 through 1987. Most striking was a rapid warming of the middle of the Southern Hemisphere, where there in fact are virtually no sulfates available to counter greenhouse warming.

However, when the entire record of weather balloon data, from 1958 through 1995, was used, this most pronounced region of warming turned out to show no change whatsoever, as shown in Figure 44.7, which was published in *Nature* six months after the Department of Energy paper. According to the July 16, 1997, issue of *New Scientist* magazine, this criticism ''drew blood'' in the greenhouse controversy.

The reasons that the climate forecasts made for the FCCC and the Kyoto Protocol failed are now emerging in the refereed scientific literature:

Figure 44.7
Temperatures in the Southern Hemisphere



SOURCE: *Nature.*

- NASA's James Hansen recently calculated that the concentrations of carbon dioxide in the atmosphere are increasing at approximately 60 percent of the rate that is normally projected. Notably, he argues that the biosphere is absorbing CO_2 at a much faster rate than anticipated, as he wrote that ''apparently the rate of uptake by CO_2 sinks, either the ocean, or, *more likely the forests and soils* [emphasis added] has increased.''
- The second most important greenhouse gas that humans are emitting into the atmosphere is methane, which currently has around 30 percent of the warming potential of the carbon dioxide increase. Writing in *Nature* magazine, NOAA scientists recently showed that the concentration of methane in the atmosphere is rapidly stabilizing. It has done this because its concentration is coming into chemical equilibrium with other atmospheric reactants. Their calculations strongly suggest that the concentration will remain stable in the future. The IPCC assumed that, without any controls, the methane warming effect would *double* by 2050 and increase by 125 percent by 2100.
- Finally, a recent article in the journal *Geophysical Research Letters* revealed the stunning finding that the amount of direct warming due to carbon dioxide was overestimated by 15 percent. *This is the driving force behind the entire issue*!

The debate about global warming has never been about *whether* the globe's mean temperature would warm, but rather about the amount of warming that might be expected and the location of that warming. Ten years ago the ''skeptics'' predicted that the warming in the next century would be in the range of 1.8°F–2.7°F. It is instructive to see how the IPCC and recent findings have moved in their direction:

Declining Projections of Global Warming

IPCC 1990 initial estimate: **5.8°F**
IPCC revised 1992 estimate: **4.7°F**
IPCC revised 1995 estimate: **3.6°F**
After allowing for overestimation of direct CO_2 warming: **3.2°F**
After allowing for flattening of methane increase: **2.7°F**
After allowing for decrease in carbon dioxide accumulation: **2.25°F**
The reduced warming is necessarily concentrated in the coldest winter air masses, rather than during humid summers.

Is the Climate Becoming More Variable?

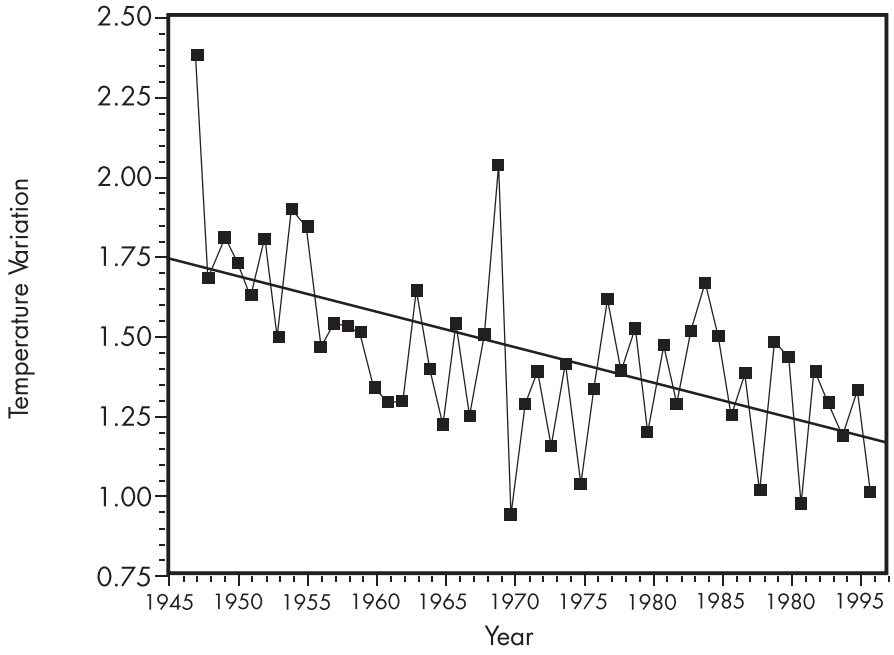
A recently published paper in the journal *Climate Research* examined the surface temperature history in order to answer three questions:

- *Is the temperature becoming more variable from year to year*? It found a statistically significant decline in interannual variability worldwide (Figure 44.8).
- *Is the variation from day to day increasing?* It found no statistically significant change.
- *Is the number of record high or low temperatures increasing*? It found no statistically significant change.

In summary, this is what the climate has done during the greenhouse enhancement: The most notable change is that the coldest air masses of winter in Siberia and North America have warmed slightly. The only change in temperature variability has been a tendency toward reduced year-to-year variability.

Those results should be integrated with the results of a recent landmark study of U.S. streamflow by the U.S. Geological Survey. In an investigation of undisturbed sites, they found *no change* in the frequency of highest flow (flood) events, but a decrease in lowest flow (drought) events.

Figure 44.8
Worldwide Interannual Temperature Variability



SOURCE: *Climate Research.*

We are not entering a world of increased variability, unpredictability, and peril, but rather the opposite. If this is human interference in the climate, it is hardly ''dangerous.''

The Kyoto Protocol: How Much Warming Is Prevented?

This analysis assumes the IPCC's ''consensus'' estimate of 2.0°C (3.6°F) of warming by the year 2100 in the absence of substantial emissions stabilization. As noted, that number is probably a considerable overestimation.

The Kyoto Protocol requires that the United States reduce its overall greenhouse gas emissions by a remarkable 30–40 percent (depending on the method used for projection of increases) for the 2008–12 average, compared to where they would be if we continue on the trajectory established in the last two decades. The economic costs are enormous. Even

according to the IPCC, credible estimates are in the range of 1–2 percent of GDP per year.

A senior National Science Foundation scientist recently calculated the ''saved'' warming, under the assumptions noted above, that would accrue if *every* nation met its obligations under the Kyoto Protocol. According to him, the earth's temperature in 2050 will be 0.13°F lower as a result. That difference is so small that it cannot be reliably measured by ground-based thermometers. If one assumes the more likely scenario that warming to the year 2100 will be less than the IPCC estimate, the saved warming drops to 0.09°F over the next 50 years.

This is no benefit at an enormous cost. Because the treaty can potentially allow the United Nations to sanction those who do not meet their obligations, it is no benefit with an enormous loss of national sovereignty.

Conclusion

The observed data on climate and recent emissions trends clearly indicate that the concept of ''dangerous'' interference in the climate system is outmoded within any reasonable horizon. This makes the Kyoto Protocol a useless appendage to a treaty that has been bypassed by scientific evolution.

Article 25 of the treaty allows signatories to withdraw from the FCCC upon submission to the United Nations Secretariat of a letter requesting withdrawal. Congress should direct the president to write that letter.

Suggested Reading

Adler, Jonathan, ed. *The Costs of Kyoto: Climate Change Policy and Its Implications*. Washington: Competitive Enterprise Institute, 1997.

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———. *Sound and Fury: The Science and Politics of Global Warming*. Washington: Cato Institute, 1992.

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Singer, Fred. *Hot Talk, Cold Science: Global Warming's Unfinished Debate*. Oakland: Independence Institute, 1997.

—Prepared by Patrick J. Michaels