

May 6, 2009

The Honorable Henry A. Waxman, Chairman
Committee on Energy and Commerce
United States House of Representatives
2125 Rayburn House Office Building
Washington, D.C. 20515-6115

Dear Congressman Waxman,

Thank you for your letter of April 28 requesting responses to questions from the Honorable Joe Barton and the Honorable Fred Upton as follow-up to my testimony before the Subcommittee on Energy and Environment March 25, 2009.

Following are the questions (in italics) and my answers. Because nothing distinguished which questions came from Congressman Barton and which from Congressman Upton, I am answering them all together.

1. *We heard from other panelists that justice dictates the United States do something for the harm caused by its CO2 emissions. What did the U.S. produce with these emissions, and did that bring any benefit to the world, and the world's poor?*

Answer: Because of competing understandings of justice as a principle of ethics, this would be a difficult question to answer even if there were no debate about the effects of rising atmospheric CO2 concentration (not only on climate but also on plant growth). Let me begin by addressing the meaning of justice and then consider how it applies to the case of CO2 emissions.

There are in the history of political and moral philosophy competing definitions of justice. Aristotle defined it as rendering equal things to equals and unequal things to unequals in proportion to their relevant inequalities. Marxism defines it as equal distribution of wealth (and other benefits) to all in a given community—most widely speaking, to all people. Much environmentalist philosophy extends Marxism's idea of justice beyond humanity to other animals of relatively high intelligence, or to sentient animals, or to animals generally, some to all living things, and some to the entire creation. Because justice implies rights and duties, and rights and duties adhere only to moral agents (for none other can recognize or perform them), this extension is mistaken.

As a Christian theologian/philosopher, I base my understanding of justice (like all subjects) on the Bible, which is the written Word of God, the most important source of political and moral philosophy in Western civilization, and certainly the most formative source of political thought for America's founding fathers, whose writings show, as the great Harvard historian Bernard Bailyn showed in *The Ideological Origins of the American Revolution*, that their acquaintance with classical Greece and Rome and with the European Enlightenment was fairly superficial and ornamental, while their use of the Bible and of the Christian, especially the Reformed Protestant, tradition in political thought showed deep and thoughtful understanding and application. In my first book in the field of political economy,

Prosperity and Poverty: The Compassionate Use of Resources in a World of Scarcity (1988), I defined justice, through careful examination of Old and New Testament teaching, as rendering impartially and proportionally to everyone his due according to the righteous standard of God's moral law. In that book and a later article for the journal *Transformation*¹ I discussed how that definition works itself in terms of the two domains of justice (personal or private, on the one hand, and social or public, on the other), the three forms of justice (commutative, distributive, and vindicative), and the two special goals of justice (remediation and retribution).

The application of justice to whether and what remediation the U.S. owes to other countries for its CO2 emissions tends to be addressed by those who insist on it under the category of either remediative justice, that is, the remedy due to someone harmed by another's action, or distributive justice, that is, in their perspective, the distribution of wealth among people and communities. The Biblical definition of justice I developed (in keeping with the thought of many Christian theologians and philosophers before me) would exclude the distributive notion from this issue, because the fundamental meaning of justice as rendering to each his *due* in accord with the righteous standards of God's moral law (the Ten Commandments and their many implications, positive and negative) is incompatible with the Marxist/socialist notion that justice requires equality, or some approximation of it, in the distribution of wealth. (True distributive justice is precisely the distribution of commutative, remediative, and retributive justice to all members of the community—i.e., ensuring that the same rules apply equally to all. It is the Rule of Law, and hence the exclusion of privilege and favoritism.) People's differing values, aptitudes, skills, and personal histories result in conduct that is unique from individual to individual, so that the wealth that is due to any one person is not identical to that due to any other.

That leaves remediative justice as the category under which we would consider whether and what justice demands of the U.S. in light of CO2 emissions. Remediative justice comes into play when it can be demonstrated that one person's (or community's) actions have imposed harm on another person (or community). The aim of remediative justice is to restore to his state prior to the harm's imposition the victim of the harm done, the cost of doing so being born by the perpetrator of the harm. (This is the basis of tort law.) To achieve this, one must prove that the alleged victim has indeed been harmed and that the harm was due to the action of the alleged perpetrator. In some cases, this is fairly straightforward. But in the case of alleged harm from CO2 emissions, it is extremely difficult, if even possible. The state of our understanding of enhanced atmospheric CO2 concentration on the biosphere (including atmosphere, land, and water, and all the life forms that inhabit them) is in its infancy, and well-qualified scientists disagree enormously over many of the questions.² (E.g., (a) how

¹"Justice and Poverty: Two Views Contrasted," *Transformation*, vol. 10, no. 1 (January/April 1993), 16–22.

²D. Bray and H. Von Storch, "The Perspectives of Climate Scientists on Global Climate Change," Forschungszentrum GKSS 2007, online at http://dvsun3.gkss.de/BERICHTE/GKSS_Berichte_2007/GKSS_2007_11.pdf; U.S. Senate Environment and Public Works Committee, Minority Report: "More Than 700 International Scientists Dissent Over Man-Made Global Warming Claims," online at

much warming of the atmosphere near Earth's surface can be expected from doubled CO₂ concentration—the IPCC's Fourth Assessment Report setting forth a mid-range estimate of 3°C based on studies published through June of 2005, but several studies since then, such as those by Dr. Stephen Schwartz at the Brookings Institution and by Dr. Roy Spencer at the University of Alabama at Huntsville,³ implying warming of from 1/6 to 1/3 that amount, and all studies recognizing that the effect is logarithmic, i.e., diminishing with each added unit of CO₂, so that more warming comes from the first 50% increase in CO₂ than from the second, and more from the second than from the third, etc.; (b) how much sea level rise might be expected from a given amount of warming in response to a given amount of CO₂ enhancement—the IPCC estimating from 12 to 23 inches in this century with about 17 as a mid range, but the Sea Level Commission of the International Union for Quaternary Research estimating at +10 +/- 10 centimeters (0 to 7.88 inches);⁴ (c) what changes in temperature and rainfall distributions might occur around the Earth due to given amounts of warming in response to given amounts of CO₂ enhancement—an issue on which computer climate models are incapable of giving much credible answer; (d) whether and to what extent plant life, and all life that depends on plant life, benefits from rising CO₂—most studies suggesting an average 35% increase in plant growth efficiency from every doubling of CO₂ concentration, the effect being linear;⁵ (e) the effect of enhanced CO₂ on aquatic life, such as coral reefs—some studies suggesting significant damage due to bleaching from either warming or change in pH of the water, other studies suggesting that such damage is short-term, corals recovering rather quickly.⁶) Some studies have suggested that moderate CO₂-driven warming would have a net positive effect on the global economy, others that it would have a net negative effect.⁷ It is extremely difficult, perhaps impossible, to specify what effect it would have on given locales, and without that specification it would be impossible even to conclude that a given community has suffered (or will suffer) harm, let alone to quantify the harm so as to justify a given level of remediation owed. In the absence of proof beyond reasonable doubt that harm has been (or will be) imposed and that it is of such-and-such economic value, it is

http://epw.senate.gov/public/index.cfm?FuseAction=Files.View&FileStore_id=83947f5d-d84a-4a84-ad5d-6e2d71db52d9.

³Stephen E. Schwartz, "Heat Capacity, Time Constant, and Sensitivity of Earth's Climate System," Brookhaven National Laboratory, June 2007, online at <http://www.ecd.bnl.gov/steve/pubs/HeatCapacity.pdf>; Roy W. Spencer, "Satellite and Climate Model Evidence Against Substantial Manmade Climate Change, December 27, 2008, online at <http://www.drroyspencer.com/research-articles/satellite-and-climate-model-evidence/>.

⁴Nils-Axel Mörner, "Estimating Future Sea Level Changes from Past Records," *Global and Planetary Change* 40, issues 1–2 (January 2004): 49–54, online at http://www.junkscience.com/jan04/nils-morner_1.pdf.

⁵Many studies have been published demonstrating the benefits of rising CO₂ to agriculture. Much of the work has been done by scientists at the Center for the Study of Carbon Dioxide and Global Change, <http://www.co2science.org/scripts/CO2ScienceB2C/Index.jsp>, which has links to many articles by both its own scientists and others.

⁶A good review and assessment of the scientific studies to date is Craig D. Idso's *CO₂, Global Warming, and Coral Reefs: Prospects for the Future* (Center for the Study of Carbon Dioxide and Climate Change/Science and Public Policy Institute, 2008).

⁷Studies on both sides are discussed in William Nordhaus's *A Question of Balance: Weighing the Options on Global Warming Policies* (Yale University Press, 2008).

impossible to conclude that any injustice has been done or that any remediation is due. **In my judgment, no persuasive case can be made that the U.S. and other advanced nations have imposed harm on others by emitting CO₂ into the atmosphere, and indeed a more credible case can be made in the opposite direction, namely, that CO₂ emissions from the use of energy have benefitted the world, and will continue to benefit it, both directly through the goods and services produced through the use of the energy and indirectly through the plant growth enhancement (including increased agricultural crop yields) driven by increased atmospheric CO₂—the latter benefiting not only the human community but also all the rest of life on Earth, since all animal life depends on plant life, and since increased crop yields diminish the amount of land that must be cultivated to feed the human population, leaving more land available for natural species.**

a. *In your view, where is the justice in curtailing U.S. economic growth, which presumably contributes to the economies of the world?*

Answer: Curtailing U.S. economic growth by mandatory reductions on carbon-emitting energy use not only would not be doing some sort of remediative justice to other countries in the world but would instead be doing actual injustice to both the United States and the rest of the world because it would needlessly diminish economic production domestically and abroad. It would have a negative effect on the economic well being of Americans and the rest of the world alike.

2. *What is the Cornwall Alliance for the Stewardship of Creation? What is the Evangelical Climate Initiative and what is the Alliance's position regarding this?*

Answer: The Cornwall Alliance for the Stewardship of Creation is a non-partisan network of theologians, pastors, other religious leaders, scientists, economists, and public policy experts all committed to applying Biblical world view, theology, and ethics together with excellent science and excellent economics to help to devise and promote public policies in the United States and around the world that will simultaneously promote economic development for the poorest peoples of the world (e.g., those in sub-Saharan Africa) and environmental protection and improvement, especially in those poorest regions. It was founded (under the name Interfaith Stewardship Alliance) in 2005 on the basis of the Cornwall Declaration on Environmental Stewardship, which itself was devised in 1999 by a group of theologians, scientists, economists, and public policy experts specializing in environmental studies that met in West Cornwall, Connecticut.

The Evangelical Climate Initiative is an organization launched by the Evangelical Environmental Network and others in January, 2006, around a document called "Climate Change: An Evangelical Call to Action," which promoted the view that recent and foreseeable global warming is primarily manmade and very likely to be catastrophic, and that the best response to it is to attempt to mitigate it by mandatory reductions in the use of fossil fuels. The ECI's document was written primarily by Dr. David Gushee, then a professor of ethics at Union University in Jackson, Tennessee, whose background did not provide expertise in the relevant science or economics; it was endorsed initially by 86 pastors, theologians, evangelical college presidents, mission leaders, and others, none of whom appears to have had relevant expertise. The ECI's statement offered no citation of scholarly sources and almost no data to back its claims, and did not identify its authors.

The Cornwall Alliance (then called Interfaith Stewardship Alliance) responded with “A Call to Truth, Prudence, and Protection of the Poor: An Evangelical Response to Global Warming,” in August, 2005. Its primary authors were Roy W. Spencer (Ph.D., meteorology), principal research scientist in climatology at the University of Alabama, Huntsville; Paul Driessen, Esq., energy policy analyst with the Congress of Racial Equality and author of *Green Power, Black Death*, a book on the destructive impact of much environmental policy on the poor of Africa; Ross McKittrick (Ph.D., economics), professor of environmental economics at the University of Guelph in Ontario, Canada, and an expert reviewer for the IPCC; and myself (Ph.D., history), then a professor of social ethics, author of three books on the theology, ethics, and economics of population, resources, and the environment, and editor of a major scholarly compendium in the field. The “Call to Truth” cited extensively from scholarly literature in the field, offered extensive data, and clearly identified its authors. It was endorsed initially by over 110 theologians, pastors, scientists, economists, and other leaders, most with relevant expertise (and the total now tops 180).

3. *If we are concerned that there will be catastrophic man-made global warming, is a cap-and-trade scheme the best way to deal with the problem?*
 - a. *What role does investment in economic growth and direct actions to adapt?*
 - b. *Would limiting carbon output help or harm developing countries?*

Answer: First, a cap-and-trade scheme not only has proved a dismal failure in Europe but also endangers future generations both by raising the price of energy and so depressing economic production and growth but also by putting all our eggs in one basket. On the former score, cap-and-trade (and with it all other means of mandatory reductions in CO₂ emissions) will raise the price of energy, thus raising the overall cost of living, depressing economic production, and slowing economic development, harming people in both the present and the future. On the latter score, efforts to control future temperature by any means of CO₂ emission reduction (cap-and-trade or otherwise) will only be of benefit (however slight) if indeed it turns out that temperature response to rising CO₂ emissions is large (i.e., on the order of 3°C or higher in response to doubled CO₂), whereas recent studies like those by Roy Spencer and Stephen Schwartz give very strong evidence that it is small (on the order of 0.5°C). The likelihood that other, natural cycles (solar/cosmic rays, ocean current cycles, etc.) are leading into significant global cooling and will overwhelm any warming from CO₂ makes it important that we be prepared to adapt equally to the warmer and the cooler temperatures that are both bound to come. Money spent solely on efforts to cool the planet cannot equally protect us from global cooling. Adaptation, therefore, is preferable, as I argued in “An Examination of the Scientific, Ethical, and Theological Implications of Climate Change Policy,” co-authored with climatologist Roy Spencer and energy policy analyst Paul Driessen.⁸ There, using sequential decision theory, I compared a prevention strategy (of which cap-and-trade is a variety) with an adaptation strategy:

Prevention strategy. Under the prevention strategy, the analysis begins with two

⁸Online at <http://www.cornwallalliance.org/docs/an-examination-of-the-scientific-ethical-and-theological-implications-of-climate-change-policy.pdf>.

scientific options: either human activity is significantly warming the Earth, or it is not.

(A) If human activity is not significantly warming the Earth, trying to prevent global warming by reducing energy use will result in a world that is poorer in wealth and technology—but which still has weather that is no more stable or predictable than it has ever been. In other words, we shall have bought an unnecessary insurance policy and forgone all the benefits that the cost of that policy might have obtained, had the money been spent elsewhere.

(B) If human activity is significantly warming the Earth, two economic options are possible: the warming might be either catastrophic and imminent, or benign and gradual.

(1) If it is benign and gradual, trying to prevent global warming by reducing energy use will result in a world that is poorer in wealth and technology, but may have better weather, at least in some areas. Again, we shall have bought an unnecessary insurance policy and forgone all the other benefits that have been made unaffordable.

(2) If it is catastrophic and imminent, two political options are possible: either a global carbon-reduction policy is achievable, or it is not.

(a) If a global carbon-reduction policy is not achievable, trying to prevent global warming by reducing energy use will result in a world that is poorer in wealth and technology, and that has worse weather. We shall have bought an insurance policy from an insurance company that goes bankrupt and cannot pay off when disaster strikes. Moreover, we shall once again have forgone all the other benefits the purchase price might have obtained for us—including the ability to adapt to the worse weather.

(b) If a global carbon-reduction policy is achievable, trying to prevent global warming by reducing energy use will result in a world that is poorer in wealth and technology, but has stable weather—assuming there are no natural solar and climate cycles that cause unstable weather. That is, the insurance policy will have paid off. Yet, by buying it, we shall still have forgone all the other benefits its purchase price might have afforded—including the capacity to adapt to climate change and other future risks.

Adaptation strategy. Under the adaptation strategy, the analysis again begins with the same scientific options: either human activity is significantly warming the Earth, or it is not.

(A) If human activity is not significantly warming the Earth, preparing for adaptation through economic growth unhindered by the costs of the prevention strategy will result in a world that is richer in wealth and technology—and therefore better prepared to bear the costs of either preventing or adapting to other risks. Once again, weather may or may not be “stable,” depending on natural solar, climate, oceanic and other cycles.

(B) If human activity is significantly warming the Earth, again the two economic options are possible: the warming might be either catastrophic and imminent or benign and gradual.

(1) If it is benign and gradual, preparing for adaptation through economic growth unhindered by the costs of the prevention strategy will result in a world with better weather that is richer in wealth and technology and therefore better prepared to bear the costs of either preventing or adapting to other risks.

(2) If it is catastrophic and imminent, again the two political options are possible: a

global carbon-reduction policy is achievable, or it is not.

(a) If a global carbon-reduction policy is not achievable, preparing for adaptation through economic growth unhindered by the costs of the prevention strategy will result in a world that still has unpredictable weather—but in which greater wealth and technology make us better able to cope than if we had bought the prevention strategy.

(b) If a global carbon-reduction policy is achievable, preparing for adaptation through economic growth unhindered by the costs of the prevention strategy will result in a world that still has unpredictable and possibly worse weather—but in which greater wealth and technology once again make us better able to cope than if we had bought the prevention strategy.

Anyone who seeks to implement the Biblical virtue of prudence, or the proper handling of risk, needs to take this analysis seriously. For each of the two strategies—prevention and adaptation—there are four possible scenarios, for a total of eight. In seven out of those eight, the adaptation strategy is unequivocally more prudent. In only one—on the assumption that human activity is significantly warming the Earth, that the warming is catastrophic and imminent, and that a global carbon-reduction policy is achievable—does the prevention strategy turn out to be a good purchase. Moreover, even in that instance, it is a wise purchase only when it is viewed in isolation from all other risks—and even then it is not apparent that it is a better purchase than the adaptation strategy. When we take those other risks into account, the adaptation strategy turns out to be more prudent than the prevention policy, even under the best-case scenario [for the prevention strategy].

Second, as will be apparent from the analysis just presented, investment in economic growth and adaptive technologies will play an important role in protecting and improving human well being regardless whether our future climate is warmer or cooler, wetter or drier, more or less stormy, with higher or lower sea level. Adaptation through economic development is inherently flexible, suitable to a wide variety of threat scenarios. Prevention of warming is inherently inflexible, suitable to only one threat scenario: destructive global warming driving by CO₂ enhancement.

Third, believing as I do that CO₂ enhancement has little effect on global average temperature and that global average temperature in turn has little effect on human well being, I cannot but conclude that limiting CO₂ emissions will do no good for developing nations. And, recognizing as I do that rising atmospheric CO₂ concentrations enhance plant growth and so raise crop yields, lowering food prices and allowing us to feed the human population on less land and thus leaving more land available for natural habitat, I cannot but conclude that limiting CO₂ emissions will do positive harm to developing nations by preventing their benefiting from those good effects of rising CO₂. These observations are relevant even if the CO₂ emission limits are embraced only in developed nations. If they are made to apply to developing nations as well—and no significant effect on future temperature can be achieved otherwise—the limits will harm the developing nations in an additional way, namely, by driving up their energy costs and so reducing their productivity and growth rates, subjecting them to longer terms of continued poverty and its attendant ills of high rates of disease and premature death.

4. *We hear a lot about the cost of “inaction.” What is the most cost-effective action when it comes to addressing the risk of climate change?*

Answer: The most cost-effective action to address climate change is to refrain from attempting to mitigate (control, diminish) it, the costs of which action will greatly exceed the benefits, and instead to pursue economic development partly through abundant and affordable energy to enable us to adapt to whatever climate change is ahead.

- a. *Do cap-and-trade policies to mitigate temperature increases provide a net benefit to human and ecosystem well being?*

Answer: Cap-and-trade policies to mitigate temperature increases will have a net cost to human and ecosystem well being—their costs will outweigh their benefits, as Bjørn Lomborg has argued eloquently in his book *Cool It: The Skeptical Environmentalist’s Guide to Global Warming* and elsewhere. Any policy that forces us to switch from lower-cost fuels to higher-cost fuels—no matter which ones they are, and no matter what their real or alleged effect on global temperature might be—is a policy to harm the poor. If we subsidize production of grain ethanol (which full life-cycle analysis shows releases about as much CO₂ into the atmosphere per unit of energy delivered as do oil and coal), we not only must support the subsidy by taxation but also diminish the supply of grain for food, contributing, as we did in late 2007 through 2008 through subsidies to corn ethanol production, to higher food prices and resulting hunger and starvation. If we tax CO₂ emissions, whether directly at the point of sale or indirectly via cap-and-trade, we raise the price of energy and so the prices of all things made and transported by energy—which is essentially everything.

But this is particularly devastating to the poor, for whom energy constitutes a higher proportion of spending than for the middle class and the rich. In the United States, estimates of the proportion of household budgets spent on energy by the poor range around 25 percent; for the middle class and wealthy, down around 10 percent. The Tax Foundation estimates that cap-and-trade would raise energy costs for families in the bottom fifth of income earners by 6.2% of household income, and for those in the top fifth by 1.4%.⁹ Every increase in energy prices therefore raises the poor’s cost of living more, proportionately, than the wealthy’s. It is, in fact, a highly regressive tax.

The impact on the poor outside America is much worse. Forcing the poor in the developing world to forgo the use of carbon-based fuels—coal, oil, and natural gas, the cheapest fuels per kilowatt-hour of energy delivered—means delaying by decades or generations the time when they can afford electricity for their homes and industries, and thus delays for similar periods the time

- when they can refrigerate their food and so protect it from spoilage and themselves from undernutrition for lack of food, and diseases from spoiled food;
- when they can heat their homes with clean electricity rather than by open fires of wood and dried dung, the smoke from which causes respiratory diseases that reduce the amount of work they can do and so reduce their incomes, and kill 2 to 4 million every year;

⁹Tax Foundation, “Who Pays for Climate Policy? New Estimates of the Household Burden and Economic Impact of a U.S. Cap-and-Trade System,” March 2009, online at <http://www.taxfoundation.org/files/wp6.pdf>.

- when they can air condition their homes and so close windows and doors, keeping out insects that spread malaria, dengue fever, and other diseases that kill millions every year and disable scores to hundreds of millions;
- when they can power their tools and factories by electricity, multiplying their productivity and hence increasing their earnings and consequently their ability to afford food, clothing, shelter, health care, transportation, and many other basic needs, not to mention the pleasures of the middle class and wealthy;
- when they can air condition their workplaces, lengthening their effective working hours and hence their earning potential during hot months.
- Perhaps most ironically of all, delaying economic development because of concerns to protect the environment also means delaying the time when developing countries can afford to spend more of their incomes protecting and restoring creation. A clean, healthful, beautiful environment is a costly good, and the wealthier people become, the more of it they can afford, which is why—contrary to the standard view of the environmentalist movement—economic development is the friend, not the foe, of environmental improvement.¹⁰

Inexpensive fossil fuels contributed enormously to the economic development of the wealthy countries of the world. To demand that poor countries forgo their use is to deprive them of that benefit. It is, I insist, a grave injustice. It is the demand of wealthy, powerful elites at the expense of the vulnerable poor. It is every bit as much a case of imperialism as was the colonialism of the seventeenth- through mid-twentieth centuries and will slow development. As the Cornwall Alliance put it in our *Call to Truth, Prudence, and Protection of the Poor: An Evangelical Response to Global Warming*:¹¹

by condemning the world's poor to slower economic development by raising energy prices, the ECI asks the poor to give up or at least postpone their claims to modern technology that is essential for a better future for themselves and their children. It tells them they must not expect to have fossil fuels, electricity, or even eco-tourism (because jets emit greenhouse gases and cause climate change). Other environmental activists tell them they must not use hydroelectric or nuclear power to generate electricity, because of fears of damming rivers and risks from handling nuclear wastes. So the world's poor must remain indigenous, traditional, and poor—or as Leon Louw has put it, must continue living in “human game preserves,” so that affluent Westerners can visit them in their quaint villages.¹²

And as Bjørn Lomborg put it in *Cool It: The Skeptical Environmentalist's Guide to Global Warming*:

¹⁰Indur M. Goklany, *The Improving State of the World: Why We're Living Longer, Healthier, More Comfortable Lives on a Cleaner Planet* (Washington: Cato Institute, 2007), Part B: “The Effects of Economic Development and Technological Change on the Environment,” pp. 103–234.

¹¹Available online at www.CornwallAlliance.org.

¹²For thorough discussion of the destructive impact of much environmental policy originating in the West on the poor in the developing world, see Paul Driessen, *Eco-Imperialism: Green Power Black Death* (Bellevue, WA: Free Enterprise Press, 2003).

In the third world, access to fossil fuels is crucial. About 1.6 billion people don't have access to electricity, which seriously impedes development. Two and a half billion people use biomass such as wood, waste, and dung to cook and keep warm. For many Indian women, searching for wood costs three hours each day, as they sometimes walk more than six miles per day. It also causes excess deforestation. About 1.3 million people—mostly women and children—die each year due to heavy indoor-air pollution. A switch from biomass to fossil fuels would dramatically improve 2.5 billion lives; the cost of \$1.5 billion annually would be greatly superseded by benefits of about \$90 billion. For both the developed and the developing world, a world without fossil fuels in the short or medium term is a lot like a world gone medieval.¹³

b. *Should we pursue both mitigation and adaptation, as the United Nations and others argue? If not, why not?*

Answer: We should not pursue both mitigation and adaptation, because any attempt at mitigation is going to be a dead loss to us—its costs far outweighing its benefits—and will therefore diminish the resources available to us not only for a myriad of other tasks but also, and ironically, to adapt to the natural warming and cooling that will most certainly occur in the future, just as they have in the past. The current cool solar cycle, in which we have now gone some 600 days without a sunspot, may very well usher in a period of significant cooling, which (because, e.g., cold snaps cause mortality rates 10 times higher than heat waves, and shortened growing cycles reduce agricultural production and so make food more expensive, and storminess increases during colder periods because of increased temperature differential between poles and equator) is much more dangerous than warming. Money wasted on trying (ineffectively) to reduce warming will be unavailable to adapt to cooling, and the result will be greater human suffering.

Sincerely,

E. Calvin Beisner, Ph.D.
National Spokesman
The Cornwall Alliance for the Stewardship of Creation

¹³Bjørn Lomborg, *Cool It: The Skeptical Environmentalist's Guide to Global Warming* (New York: Alfred A. Knopf, 2007), 156.