An Open Letter to Pope Francis on Climate Change

Your Holiness:

April 27, 2015—As world leaders contemplate a climate agreement, many look to you for guidance. We commend you for your care for the earth and God's children, especially the poor. With this letter we raise some matters of concern that we ask you to consider as you convey that guidance.

Much of the debate over environmental stewardship is rooted in a clash of worldviews, with conflicting doctrines of God, creation, humanity, sin, and salvation. Unfortunately, that clash often works its way into the very conclusions of environmental science. Rather than a careful reporting of the best evidence, we get highly speculative and theory-laden conclusions presented as the assured results of science. In the process, science itself is diminished, and many well-meaning moral and religious leaders risk offering solutions based on misleading science. The effect, tragically, is that the very people we seek to help could be harmed instead.

This is especially tragic since science itself arose in Medieval Europe, the one culture nurtured for centuries in the Biblical picture of reality that encouraged the scientific endeavor. This truth is commonplace to a wide and diverse array of historians and philosophers of science. As Alfred North Whitehead elaborated:

> The greatest contribution of medievalism to the formation of the scientific movement [was] the inexpugnable belief that … there is a secret, a secret which can be unveiled. How has this conviction been so vividly implanted in the European mind? … It must come from the medieval insistence on the rationality of God, conceived as with the personal energy of Jehovah and with the rationality of a Greek philosopher. Every detail was supervised and ordered: the search into nature could only result in the vindication of the faith in rationality. …

In Whitehead's estimation, other religions' ideas of a god or gods could not sustain such an understanding of the universe. On their presuppositions, any "occurrence might be due [as with animism or polytheism] to the fiat of an irrational despot" or [as with pantheism and atheist materialism] "some impersonal, inscrutable origin of things. There is not the same confidence as [with Biblical theism] in the intelligible rationality of a personal being."[1]

In short, the Biblical worldview launched science as a systematic endeavor to understand the real world by a rigorous process of testing hypotheses by real-world observation. Nobel Prize-winning physicist Richard Feynman explained "the key to science" this way:

> In general we look for a new law by the following process. First we guess it. Then we compute the consequences of the guess to see what would be implied if this law that we guessed is right. Then we compare the result of the computation to nature, with experiment or experience, compare it directly with observation, to see if it works. *If it disagrees with experiment it is wrong*. In that simple statement is the key to science. It does not make any difference how beautiful your guess is. It does not make any difference how smart you are, who made the guess, or what his name is—if it disagrees with experiment it is wrong. That is all there is to it.[2]

That statement, simple yet profound and absolutely essential to the practice of genuine science, follows necessarily—and only—from the Biblical worldview.

Christian and Jewish scholars have performed high-quality science for centuries. They are confident that good science leads toward and will not conflict with the truth about God and man. That is why there is a Pontifical Academy of Sciences, and why for centuries there have been science faculties in thousands of Jewish and Christian colleges and universities around the world.

As people of Biblical faith, then, we have a commitment not only to truth, but also to the practice of science as one path to truth. Today, when scientists run complex climate models on powerful computers to simulate immeasurably more complex natural systems like the earth's climate, we must not forget our commitment to truth or that "key to science." Our models can become "seductive simulations," as sociologist of science Myanna Lahsen put it,[3] with the modelers, other scientists, the public, and policymakers easily forgetting that the models are not reality but must be tested by it. If their output disagrees with observation, the models, not nature, must be corrected.

Alongside good science in our approach to climate policy must be two preferential options: for humanity and, among humanity, for the poor. By this we do not mean to pit humanity against nature, any more than to pit the poor against the rich. Rather, we mean that because humanity alone bears the *imago Dei*, any effort to protect the environment must put at its center human well-being, and in particular the well-being of the poor, because they are the more vulnerable, the less able to protect themselves. As King David wrote, "Blessed is he who considers the poor! The Lord delivers him in the day of trouble" (Psalm 41:1, *RSV*). Good climate policy must recognize human exceptionalism, the God-given call for human persons to "have dominion" in the natural world (Genesis 1:28), and the need to protect the poor from harm, including actions that hinder their ascent out of poverty.

Today many prominent voices call humanity a scourge on our planet, saying that man is the problem, not the solution. Such attitudes too often contaminate their assessment of man's effects on nature. Naively claiming "the science is settled," they demand urgent action to protect the planet from catastrophic, human-induced global warming. Attributing allegedly unnatural warming to the use of fossil fuels to obtain energy essential for human flourishing, these voices demand that people surrender their God-given *dominium*, even if doing so means remaining in or returning to poverty.

Your concern for genuine science and for the poor requires a more cautious approach, one that carefully considers the scientific evidence regarding the real, not merely the theoretical, effects of human action on global climate, and carefully considers energy technology and economics in seeking to protect the poor from harm. Therefore we hope and trust that your guidance to world leaders will build on the following:

The Imago Dei *and Man's Dominion*

Severe poverty, widespread hunger, rampant disease, and short life spans were the ordinary condition of humankind until the last two-and-a-half centuries. These tragedies are normal when—as much of the environmental movement prefers—human beings, bearing the *imago Dei*, live, and are treated, as if they were mere animals, which need to submit to nature rather than exercising the *dominium* God gave them in the beginning (Genesis 1:28). Such dominion should express not the abusive rule of a tyrant but the loving and purposeful rule of our Heavenly King. It should thus express itself by enhancing the fruitfulness, beauty, and safety of the earth, to the glory of God and the benefit of our neighbors.

How Societies Overcome Poverty

What has delivered much of humanity from absolute material poverty is a combination of moral, social, political, scientific, and technological institutions. These include science and technology grounded on a view of the physical world as an ordered cosmos that rational creatures can understand and harness for human betterment; private property rights, entrepreneurship, and widespread trade, protected by the rule of law enforced by limited and responsive governments; and abundant, affordable, reliable energy generated from high-density, portable, constantly accessible fossil and nuclear fuels. By replacing animal and human muscle and low-density energy sources like wood, dung, and other biofuels, and low-density, intermittent wind and solar, fossil and nuclear fuels have freed people from the basic tasks of survival to devote time and bodily energy to other occupations.

Empirical Evidence Suggests that Fossil Fuel Use Will Not Cause Catastrophic Warming

Many fear that fossil fuel use endangers humanity and the environment because it leads to historically unprecedented, dangerous global warming. This has led many well-meaning people to call for reduced carbon dioxide emissions and hence reduced use of fossil fuels.

Computer climate models of the warming effect of enhanced atmospheric carbon dioxide are the basis for that fear. However, for models to contribute validly to decision making, they must be subordinate to data, and there has been a growing divergence between real-world temperature observations and model simulations. On average, models simulate more than twice the observed warming over the relevant period. Over 95% of the models simulate greater warming than has been observed, and only a tiny percentage come tolerably close. None simulated the complete absence of observed warming over approximately the last 16 (according to UAH satellite data) to 26 (according to RSS lower tropospheric data) years.[4] The data confirm the Intergovernmental Panel on Climate Change's (IPCC) observation that we are currently experiencing an absence of global warming long enough to be nearly impossible to reconcile with the models. All of this makes it increasingly clear that the models greatly exaggerate the warming effect of carbon dioxide. The models' errors are not random—as often above as below observed temperatures, and by similar magnitudes—but clearly biased, consistently above observed temperatures.

The scientific method demands that theories be tested by empirical observation. By that test, the models are wrong. They therefore provide no rational basis to forecast dangerous human-induced global warming, and therefore no rational basis for efforts to reduce warming by restricting the use of fossil fuels or any other means.

For the Foreseeable Future, Wind and Solar Energy Cannot Effectively Replace Fossil Fuel and Nuclear Energy

Wind and solar energy, because of their higher costs and lower efficiency, account for only a few percent of total global energy use. Fossil fuels, because of their lower costs and higher efficiency, account for over 85%. Substituting low-density, intermittent energy sources like wind and solar for high-density, constant energy sources like fossil fuels would be catastrophic to the world's poor. It would simultaneously raise the cost and reduce the reliability and availability of energy, especially electricity. This, in turn, would raise the cost of all other goods and services, since all require energy to produce and transport. It would slow the rise of the poor out of poverty. It would threaten to return millions of others to poverty. And it would make electricity grids unstable, leading to more frequent and widespread, costly and often fatal, brownouts and blackouts—events mercifully rare in wealthy countries but all too familiar to billions of people living in countries without comprehensive, stable electric grids supplied by stable fossil or nuclear fuels.

The Poor Would Suffer Most from Attempts to Restrict Affordable Energy Use

The world's poor will suffer most from such policies. The poorest—the 1.3 billion in developing countries who depend on wood and dried dung as primary cooking and heating fuels, smoke from which kills 4 million and temporarily debilitates hundreds of millions every year—will be condemned to more generations of poverty and its deadly consequences. The marginal in the developed world, who on average spend two or more times as much of their incomes on energy as the middle class, will lose access to decent housing, education, health care, and more as their energy costs rise. Some will freeze to death because they will be unable to pay their electricity bills and still buy enough food. Tens of thousands died even in the United Kingdom in several recent winters due to Britain's rush to substitute wind and solar for coal to generate electricity.

Affordable Energy Can Help Millions of the World's Poor Emerge from Poverty

While the computer climate models exaggerate the warming effect of atmospheric carbon dioxide, they plausibly simulate that greater economic development driven by growing use of fossil fuels will add more carbon dioxide to the atmosphere. Consequently, Working Group 3 of the IPCC finds that

the warmest scenarios for the future are also the richest, especially for those societies that are now the poorest. The risks of poverty and misguided energy policies that would prolong it far outweigh the risks of climate change. Adequate wealth enables human persons to thrive in a wide array of climates, hot or cold, wet or dry. Poverty undermines human thriving even in the very best of climates. It follows that reducing fossil fuel use means reducing economic development, condemning poor societies to remain poor, and requiring poor people of today to sacrifice for the sake of richer people of the future—a clear injustice.

Rising Atmospheric Carbon Dioxide Enhances Plant Growth

While adding carbon dioxide to the atmosphere causes far less warming than previously feared, it has a positive effect on plant life. With more carbon dioxide in the air, plants grow better in warmer and cooler temperatures and wetter and drier soils, make better use of soil nutrients, and resist diseases and pests better, increasing their fruit production, expanding their range, and greening the earth. This makes more food available to all other creatures, especially—as agricultural yields rise, making food more affordable—the world's poor. Substituting wind, solar, and other low-density energy sources for coal, oil, and natural gas therefore hurts the poor not only by raising energy (and all other) prices but also by reducing food production. It also hurts the rest of life on earth by depriving it of the fertilizing effect of heightened carbon dioxide.

Truly, "The heavens declare the glory of God; and the firmament proclaims his handiwork" (Psalm 19:1). By using fossil fuels to generate energy to lift billions of God's precious children out of poverty, we liberate from the tomb of the earth the carbon dioxide on which plants and therefore all the rest of life depend. This beautifully reveals the Creator's wisdom and care for all of His creation—people, animals, plants, and the earth itself.

In light of these considerations, we believe it is both unwise and unjust to adopt policies requiring reduced use of fossil fuels for energy. Such policies would condemn hundreds of millions of our fellow human beings to ongoing poverty. We respectfully appeal to you to advise the world's leaders to reject them.

---

[1] Alfred North Whitehead, *Science and the Modern World* (New York: Free Press, [1925] 1967), 13, 12, 13, cited in Rodney Stark, *The Victory of Reason: How Christianity Led to Freedom, Capitalism, and Western Success* (New York: Random House, 2005), 14–15. Loren Eiseley, likewise, wrote that "it is the Christian world which finally gave birth in a clear, articulate fashion to the experimental method of science itself." (Loren Eiseley, *Darwin's Century* [Garden City, NY: Doubleday, 1958; reprinted, Doubleday Anchor Books, 1961], 62, cited in Nancy R. Pearcey and Charles B. Thaxton, *The Soul of Science: Christian Faith and Natural Philosophy* [Wheaton, IL: Crossway Books, 1994], 18.) Similarly, Pierre Duhem observed that "the mechanics and physics of which modern times are justifiably proud proceed, by an uninterrupted series of scarcely perceptible improvements, from doctrines professed in the heart of the medieval schools." (Cited in David C. Lindbergh and Robert S. Westman, eds., *Reappraisals of the Scientific Revolution* [Cambridge: Cambridge University Press, 1990], 14, via Pearcey and Thaxton, *Soul of Science*, 53.)

[2] Richard Feynman, *The Character of Physical Law* (London: British Broadcasting Corporation, 1965), 4, emphasis added.

[3] Myanna Lahsen, "Seductive Simulations? Uncertainty Distribution around Climate Models," *Social Studies of Science* 35/6 (December 2005), 895–922.

[4] C.P. Morice, J.J. Kennedy, N.A. Rayner, and P.D. Jones, "Quantifying uncertainties in global and regional temperature change using an ensemble of observational estimates: The HadCRUT4 dataset," *Journal of Geophysical Research* (2012), 117, D08101, doi:10.1029/2011JD017187; Ross R.

McKitrick, “HAC-Robust Measurement of the Duration of a Trendless Subsample in a Global Climate Time Series,” *Open Journal of Statistics* 4 (2014), 527–535, doi: 10.4236/ojs.2014.47050.