



COMMENT ON THE DEPARTMENT OF ENERGY'S CRITICAL REVIEW OF IMPACTS OF GREENHOUSE GAS EMISSIONS ON THE U.S. CLIMATE

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*Institute for Energy Research**

The new report from the Department of Energy, [A Critical Review of Impacts of Greenhouse Gas Emissions on the U.S. Climate](#) (July 29, 2025) is a welcome synthesis of climate science and should be welcomed by all interested in the subject.

This comment highlights quotations from climate scientists who are **not** associated with the “skeptic” or “realist” school of climate science (such as DOE’s 2025 Climate Working Group), but who nonetheless rightly understand *energy as the master resource* and *the uncertainties of climate modeling*.

Energy: The Master Resource

In the Secretary’s Foreword, “Energy, Integrity and the Power of Human Potential,” the benefits of fossil fuels and human flourishing are emphasized. Energy Secretary Chris Wright stated that he sees:

“...modern energy as nothing short of miraculous. It powers every aspect of modern life, drives every industry, and has made America an energy powerhouse with the ability to fuel global progress.”

This view is hardly controversial and should be a pillar of public policy.

* The Institute for Energy Research (IER) is a not-for-profit organization that conducts intensive research and analysis on the functions, operations, and government regulation of global energy markets. IER maintains that freely-functioning energy markets provide the most efficient and effective solutions to today’s global energy and environmental challenges and, as such, are critical to the well-being of individuals and society.

Consider these three statements from President Obama's two-term science advisor, [John Holdren](#):

“When energy is scarce or expensive, people can suffer material deprivation and economic hardship.”

- “Population and the Energy Problem,” *Population and Environment: A Journal of Interdisciplinary Studies*, Spring 1991, p. 231.

“A reliable and affordable supply of energy is absolutely critical to maintaining and expanding economic prosperity where such prosperity already exists and to creating it where it does not.”

- “Memorandum to the President: The Energy-Climate Challenge,” in Donald Kennedy and John Riggs, eds., *U.S. Policy and the Global Environment: Memos to the President* (Washington, D.C.: The Aspen Institute, 2000), p. 21.

“Affordable energy in ample quantities is the lifeblood of the industrial societies and a prerequisite for the economic development of the others.”

- “Meeting the Energy Challenge,” *Science*, February 9, 2001, p. 945.

In the same vein, [James Hansen](#), the father of climate alarmism, has stated:

“Let's be clear: the frequent comparison of the fossil fuel and tobacco industries is nonsense. Fossil fuels are a valuable energy source that has done yeomen service for humankind.”

- “Fighting the Battles: Winning the War” ([June 1, 2021](#))

Climate Modeling

The DOE Report states (pp, 25, 26):

“There is growing recognition that climate models are not fit for the purpose of determining the Equilibrium Climate Sensitivity (ECS) of the climate to increasing CO₂.... It is difficult for GCMs to simulate any of these processes correctly owing to their small scale, let alone

predict how they will change in the future. Further, cloud processes modulate the magnitudes of the water vapor, lapse rate, and the surface albedo feedbacks.”

The unsettled nature of climate science is an open secret. Many climate scientists admit to the fragility of global climate modeling as if by acknowledging it, they are then free to then defend it as the basis of (problematic) predictions, even attribution studies to specific events.

[Kerry Emanuel](#) (MIT), author of *What We Know About Climate Change*, remarked:

“If I’d written a book called *What We Don’t Know about Climate Science*, it would have been an encyclopedia.... I actually share with [opponent] John [Christy] an inherent distrust of complicated models. I don’t like them particularly. It’s one of the necessary evils.”

[Gerald North](#) (Texas A&M) has written:

“We do not know much about modeling climate. It is as though we are modeling a human being. Models are in position at last to tell us the creature has two arms and two legs, but we are being asked to cure cancer.” [Gerald North (Texas A&M) to Rob Bradley (then at Enron), November 12, 1999]

[Model results] “could also be sociological: getting the socially acceptable answer.” [Gerald North (Texas A&M) to Rob Bradley (Enron), June 20, 1998]

“There is a good reason for a lack of consensus on the science. It is simply too early. The problem is difficult, and there are pitifully few ways to test climate models.” [North to Rob Bradley, July 13, 1998]

“One has to fill in what goes on between 5 km and the surface. The standard way is through atmospheric models. I cannot make a better excuse.” [North to Rob Bradley, October 2, 1998]

“The ocean lag effect can always be used to explain the ‘underwarming’....”

“The different models couple to the oceans differently. There is quite a bit of slack here (undetermined fudge factors). If a model is too

sensitive, one can just couple in a little more ocean to make it agree with the record. This is why models with different sensitivities all seem to mock the record about equally well. (Modelers would be insulted by my explanation, but I think it is correct.)" [North to Rob Bradley: August 17, 1998]

[Andrew Dessler](#), also of Texas A&M, has written:

"... climate scientists cannot conduct controlled experiments on the Earth.... Instead they use ...Global Climate Models, or GCMs—mathematical representations of the Earth that run on computers."

"Processes operating at smaller scales [than 100 km], such as clouds, cannot be represented explicitly in the models but just instead be parameterized."

"Parameterizations ... [have] ad hoc constructions that are tuned so the model produces a realistic present-day climate. Consequently, parameterizations are one of the largest sources of uncertainty in GCMs."

– Dessler and Edward Parson, *The Science and Politics of Global Climate Change: A Guide to the Debate* (Cambridge University Press, 2000), pp. 19–20.

***Economist* magazine**

The shortcomings of climate models were presented to a general audience by *Economist* magazine in "[Predicting the Climate Future is Riddled with Uncertainty](#)" (September 2019).

"[Climate modeling] is a complicated process. A model's code has to represent everything from the laws of thermodynamics to the intricacies of how air molecules interact with one another. Running it means performing quadrillions of mathematical operations a second—hence the need for supercomputers."

"And using it to make predictions means doing this thousands of times, with slightly different inputs on each run, to get a sense of which outcomes are likely, which unlikely but possible, and which implausible in the extreme."

"... models are crude. Millions of grid cells might sound a lot, but it

means that an individual cell's area, seen from above, is about 10,000 square kilometres, while an air or ocean cell may have a volume of as much as 100,000km³. Treating these enormous areas and volumes as points misses much detail."

"Clouds, for instance, present a particular challenge to modelers. Depending on how they form and where, they can either warm or cool the climate. But a cloud is far smaller than even the smallest grid-cells, so its individual effect cannot be captured. The same is true of regional effects caused by things like topographic features or islands."

"Building models is also made hard by lack of knowledge about the ways that carbon—the central atom in molecules of carbon dioxide and methane, the main heat-capturing greenhouse gases other than water vapour—moves through the environment."

"Understanding Earth's carbon cycles is crucial to understanding climate change. But much of that element's movement is facilitated by living organisms, and these are even more difficult to understand than physical processes."

Finally, the [Deep Ecology](#) notion of Nature as optimal and fragile, with the human influence as a per se negative, should be recognized. The role of fossil fuels to make unsafe Nature safer has been noted as follows:

"The popular climate discussion ... looks at man as a destructive force for climate livability ... because we use fossil fuels. In fact, the truth is the exact opposite; we don't take a safe climate and make it dangerous; we take a dangerous climate and make it safe. High-energy civilization, not climate, is the driver of climate livability."

– Alex Epstein, *The Moral Case for Fossil Fuels*, pp. 126–127.

Conclusion

A Critical Review of Impacts of Greenhouse Gas Emissions on the U.S. Climate, serves as a crucial corrective in the often-polarized climate debate. As these quotations show, many of the scientists perceived as more climate-concerned recognize that a reliable and affordable supply of energy is critical and that climate science and climate models are more uncertain than generally portrayed in the media and policy discussions.