

## Richard Lindzen

Professor of Earth, Atmospheric, and Planetary Sciences, Emeritus  
Massachusetts Institute of Technology

## William Happer

Professor of Physics, Emeritus, Princeton University

July 19, 2024

### **Net Zero Policies Will Have A Trivial Effect on Temperature, But Disastrous Effects on People Worldwide**

The United States and countries worldwide are vigorously pursuing regulations and subsidies to reduce carbon dioxide emissions to Net Zero by 2050 on the assumption, best stated by the Intergovernmental Panel on Climate Change (IPCC), that the “evidence is clear that carbon dioxide (CO<sub>2</sub>) is the main driver of climate change” and is “responsible for more than 50% of the change.”

We are career physicists with a special expertise in radiation physics, which describes how CO<sub>2</sub> affects heat flow in Earth’s atmosphere. The physics of carbon dioxide is that CO<sub>2</sub>’s ability to warm the planet is determined by its ability to absorb heat, which decreases rapidly as CO<sub>2</sub>’s concentration in the atmosphere increases. This scientific fact about CO<sub>2</sub> changes everything about the common view of CO<sub>2</sub> and climate change.

Carbon Dioxide is Now a Weak Greenhouse Gas. At today’s CO<sub>2</sub> concentration in the atmosphere of approximately 420 parts per million, additional amounts of CO<sub>2</sub> have little ability to absorb heat and therefore is now a weak greenhouse gas. At higher concentrations in the future, the ability of future increases to warm the planet will be even smaller. This also means that the common assumption that carbon dioxide is “the main driver of climate change” is scientifically false.

In short, more carbon dioxide cannot cause catastrophic global warming or more extreme weather. Neither can greenhouse gases of methane or nitrous oxide, the levels of which are so small that they are irrelevant to climate.

Referring to additional atmospheric CO<sub>2</sub> as “carbon pollution” is complete nonsense. More CO<sub>2</sub> does no harm. Quite the contrary, it does two good things for humanity: (1) It provides a slight and beneficial increase in temperature, much less than natural fluctuations. (2) It creates more food for people worldwide, which we cover further below.

#### Implications

*First.* Net Zero Efforts Will Have a Trivial Effect on Temperature. More of the atmospheric greenhouse gas, CO<sub>2</sub>, will increase temperature, but only slightly. How changes in atmospheric greenhouse gases affect radiation transfer are described by precise physical equations that have never failed to describe observations of the real world.

We applied these formulas to the massive efforts by the U. S. and worldwide to reduce CO<sub>2</sub> emissions to Net Zero by 2050 in a paper that we recommend to those with a technical background.<sup>1</sup> We show that all the efforts to achieve Net Zero emissions of carbon dioxide, if fully implemented, will have a trivial effect on temperature:

- United States Net Zero by 2050 -- only avoids a temperature increase of 2/100 °F (0.02 °F) with no positive feedback, and only 6/100°F (0.06 °F) with positive feedback of 4 that is typically built into the models of the United Nations International Panel on Climate Change (IPCC).
- Worldwide Net Zero by 2050 -- only avoids a temperature increase of 13/100 (0.13 °F), or 50/100 °F (0.50 °F) with a factor of 4 positive feedback.

These numbers are trivial, but the cost of achieving them would be disastrous to people worldwide.

Second. Net Zero Policies Will Be Disastrous for People Worldwide. In the United States and worldwide, Net Zero regulations and subsidies will have disastrous effects. Chief among them would be the proposed elimination of fossil fuels, which would mean doing away with internal combustion engines for transportation and other uses, the power plants that provide most of the world's electricity, gas space heaters and cooking stoves and the feedstocks for nitrogen fertilizers that enable the feeding of nearly half the global population. The resulting economic devastation would include massive job losses, which already has occurred in places where Net Zero subsidies and regulations have diverted capital away from investments into productive assets and into ineffective technologies such as wind and solar energy.

Those hostile to fossil fuels ignore overwhelming evidence that the increase in atmospheric carbon dioxide from their combustion has significantly greened Earth and boosted crop production.

In addition, various countries will require electric vehicles (EVs), heat pumps and electric appliances be purchased. They will require companies to report information on carbon dioxide and other greenhouse gases emissions. However, since more carbon dioxide causes trivial and beneficial warming, this data is immaterial, misleading and very expensive. It should not be required.

Third. More Carbon Dioxide Means More Food. Contrary to common reporting, more carbon dioxide increases the amount of food available to people worldwide, and is particularly helpful in drought-stricken areas. Doubling carbon dioxide to 800 ppm, for example, will increase global food supplies by approximately 60%<sup>2</sup>.

Thus, carbon dioxide emissions should not be reduced, but increased to provide more food worldwide. Moreover, there is no risk of catastrophic global warming or extreme weather because carbon dioxide is now a weak greenhouse gas. Reducing carbon dioxide emissions will reduce the amount of food available to people worldwide and produce no benefit to the climate.

Fourth. Fossil Fuels Must Not Be Eliminated. Net Zero requires that fossil fuels be eliminated because they account for about 90% of human-induced CO<sub>2</sub> emissions. However, the elimination of fossil fuels will have no effect on the climate since carbon dioxide is now a weak greenhouse gas. The use of fossil fuels must not be eliminated and should be expanded because they (1) provide more carbon dioxide which makes more food, (2) are used to make nitrogen fertilizer that enables the feeding of about half of the world's population, and (3) provide reliable and inexpensive energy for people everywhere, especially for the two-thirds of the world's population without adequate access to electricity.<sup>3</sup>

Conclusion. All Net Zero carbon dioxide regulations and subsidies in the United States and worldwide must be stopped as soon as possible to avoid disastrous effects on Americans, America, and people worldwide, especially in developing countries.

---

<sup>1</sup> R. Lindzen, W. Happer and W. van Wijngaarden, *Net Zero Avoided Temperature Increase*, ([Net Zero Averted Temperature Increase - CO2 Coalition](https://arxiv.org/abs/2406.07392); <http://arxiv.org/abs/2406.07392>)

<sup>2</sup> R. Lindzen, W. Happer and S. Koonin, "Fossil Fuels and Greenhouse Gases (GHGs) Climate Science" (April 2024), p. 3, [Lindzen-Happer-Koonin-climate-science-4-24.pdf \(co2coalition.org\)](#)

<sup>3</sup> R. Bryce, "Powering the Unplugged: Overcoming the Barriers to Electrification in the Developing World" (2023).