

Engineering and Public Policy Faculty Challenge EPA's Proposed Changes to Climate Policy

Carnegie Mellon University professors detail why the U.S. Environmental Protection Agency's proposed changes to long-standing climate regulations are scientifically unsound in a new comment filed with the agency Monday.

The EPA plans to repeal its 2009 finding that greenhouse gas emissions endanger human health and welfare. This conclusion, known as the endangerment finding, provides the EPA with the regulatory foundation for rules on greenhouse gas emissions under the Clean Air Act.

In its proposed repeal, the EPA argues that greenhouse gases do not qualify as "air pollutants" under the Clean Air Act. The agency also says the scientific record is not robust enough to justify regulation.

The comment, led by CMU engineering and public policy (EPP) professors, provides scientific evidence refuting these arguments.

"Both rationales are fundamentally flawed and contradict the overwhelming scientific consensus that greenhouse gas emissions are air pollutants that cause or contribute to air pollution endangering public health and welfare," write Peter Adams, engineering and public policy department head, Paulina Jaramillo, professor of engineering and public policy, Jeremy Michalek, professor of engineering and public policy and professor of mechanical engineering, and Kate Whitefoot, professor of engineering and public policy and professor of mechanical engineering. Eight other professors joined the comment as co-signatories.

Greenhouse gases are air pollutants

In their comment, the professors first note that the EPA's interpretation that greenhouse gases are not air pollutants because they endanger health and welfare "indirectly" through increases in global temperature and adverse weather events is artificial. Regardless of whether the effects are labeled as "indirect," the pollutants endanger American lives and the welfare of Americans.

This interpretation also is inconsistent with the EPA's past applications of the Clean Air Act. For example, the Clean Air Act has long been used to regulate pollutants like mercury and smog, which cause harm through indirect pathways. Greenhouse gases similarly fit the definition of an air pollutant, as their presence in the atmosphere is linked to well-documented risks to public health and welfare.

The comment cites overwhelming scientific evidence that shows that greenhouse gases cause changes in ground-level air pollution, including photochemical ozone. This ground-level ozone, in turn, causes premature mortality and reduced crop yields.

Greenhouse gases cause climate change that harms health and welfare

The research CMU cites shows the many risks associated with climate change caused by greenhouse gas emissions. The pathways in which climate change threatens human health and welfare include:

- **Air quality:** Climate change, driven by greenhouse gases, can worsen air quality. This happens through two primary mechanisms: an increase in wildfire emissions, which release harmful pollutants into the air, and the promotion of ground-level ozone formation, a key component of smog.
- **Extreme weather:** There is a link between greenhouse gas emissions and the increased frequency and intensity of extreme weather events, such as severe storms, droughts, and floods. These events can lead to death, injury, property damage, and stress.
- **Extreme temperatures:** Temperature extremes are the leading weather-related cause of death in the United States. Climate change is increasing the frequency and intensity of heatwaves, which will lead to a rise in heat-related mortality.
- **Disease:** Climate change is expanding the geographic range of disease-carrying insects and ticks. This is contributing to a rise in illnesses like Lyme disease, dengue fever, and other vector-borne diseases.
- **Food and water security:** Climate change poses a significant threat to global food systems and domestic water supplies. This includes risks to agricultural yields and the quality and availability of clean drinking water.

Addressing vehicle emissions

The EPA also proposes repealing its greenhouse gas emissions standards for vehicles. The CMU comment counters claims that the technology necessary to reduce emissions is not available or that U.S. emissions reductions are insignificant on a global scale. Every step taken to reduce emissions, regardless of its size relative to global totals, contributes to mitigating risk and improving lives.

EPP professors are committed to contributing their academic expertise to help inform public policy debates, ensuring that key decisions are informed by the most rigorous and up-to-date scientific understanding.

This rigorous, evidence-based analysis highlights the flaws in the EPA's proposal, and provides the agency with the factual information and expert perspective needed to reverse course and align its policy with established climate science.