



PUBLIC EMPLOYEES FOR ENVIRONMENTAL RESPONSIBILITY

962 Wayne Ave • Suite 610 • Silver Spring, MD 20910

August 14, 2022

Director Dr. Sethuraman Panchanathan
National Science Foundation
2415 Eisenhower Avenue, W19100
Alexandria, VA 22314

RE: Climate Impacts of Some NSF Research

Dear Director Panchanathan:

I am writing you on behalf of Public Employees for Environmental Responsibility (PEER) to bring to your attention the climate implications of National Science Foundation (NSF) research projects taking place on National Park Service (NPS) and U.S. Forest Service (USFS) lands. Specifically, I am referencing NSF-funded projects using sulfur hexafluoride (SF₆), a greenhouse gas 22,800 more powerful at trapping atmospheric heat over a century than carbon dioxide and with an atmospheric lifespan of 3,200 years. SF₆ is the most destructive greenhouse gas ever known. **We request that NSF cease funding projects using SF₆.**

During 2021, NSF's the National Ecological Observatory Network (NEON) used approximately 18 pounds of SF₆ on 22 sites, most on NPS and USFS sites. Over the life of the project, NEON used six times as much SF₆ – 108 pounds on a total of 24 sites – on these projects. That is equivalent to burning over 1 million pounds of coal. (<https://www.epa.gov/energy/greenhouse-gas-equivalencies-calculator> accessed on 7/28/22)

Concentrations of SF₆ in the atmosphere have been steadily rising since the mid-1970s. The U.S. Environmental Protection Agency has a program designed to lessen use of SF₆ by the electrical industry due to its ultra-potency as a greenhouse gas.

According to records PEER has obtained under the Freedom of Information Act, research scientists from both NPS and USFS began expressing concern about usage of SF₆ with NEON researchers beginning in 2020. For two years, these protests did not draw a response from NEON. Ultimately, this year, NEON has agreed to reduce its SF₆ usage to 4 pounds a year at ten sites for up to another three years.

I am sure that you will agree that scientific research is important but is not a justification for environmental irresponsibility. PEER is asking you to examine whether the limited ecological value of the NEON research using SF₆ is worth the additional significant greenhouse emissions. In short, we do not believe that this water resource research should come at the expense of atmospheric health, particularly when alternatives are available.

Further, NEON admits that there are alternatives to SF₆, notably argon, which is not a greenhouse gas. While NEON contends that the collection process for its re-aeration research is more difficult to implement, that difficulty does not preclude the continuation of this type of research. Moreover, it is our understanding that similar research projects have switched to argon

without issue.

As you know, President Biden's "Executive Order on Tackling the Climate Crisis at Home and Abroad" (Exec. Order No. 14008) declares a "climate crisis." That order directs an "all-government" approach in which every agency must "prioritize action on climate change in their policy-making and budget processes."

To that end, we request that the NSF look at the use of SF6 and other potent greenhouse gases in all the research it funds and to assess whether it can reduce the carbon footprint of these activities without diminishing their research value.

We are further asking NSF to cease funding projects using SF6 on federal lands.

We are interested in setting up a time to discuss the issue with you. If you have any questions about these requests or wish to see supporting documentation, please do not hesitate to contact me.

Thank you,

Tim Whitehouse
Executive Director

Cc: National Climate Taskforce