



U.S. HOUSE OF REPRESENTATIVES COMMITTEE ON
SCIENCE, SPACE, & TECHNOLOGY

Opening Statement

Chairman Jamaal Bowman (D-NY)
of the Subcommittee on Energy

Energy Subcommittee Hearing:
Climate and Energy Science Research at the Department of Energy
May 4, 2021

Good morning, and thank you to all of our witnesses who are joining us virtually today to discuss the importance of climate and energy science research at the Department of Energy.

This hearing is one of a series on research and development activities sponsored by the DOE's Office of Science. This office was funded at over seven billion dollars in FY21, and accounts for over half of DOE's non-defense R&D budget. The energy sciences and climate research programs were each funded at over two billion dollars and three quarters of a billion dollars in FY21, respectively. Today we will just be focusing on these two programs, though there are others that we will examine in the months ahead.

While these investments are not insignificant by any means, they are simply not enough to tackle the climate crisis. This research is not just a "nice-to-have"; it is a must-have for the safety, security, and future of humanity.

The Basic Energy Sciences program is one of our nation's biggest sponsors of research in the natural sciences. This research helps us understand matter and energy down to the atomic level to ultimately inform advances in a broad range of green energy technologies. A great example of this work is battery technology development, which we will hear much more about today. Understanding the materials properties of the various building blocks of batteries, and being able to observe how batteries perform in real time at the molecular level – this is the kind of cutting-edge scientific research we need as we drastically reduce greenhouse gas emissions.

We should also keep in mind, however, that solving the climate crisis is not only a technological challenge. To meet our climate goals, as the Intergovernmental Panel on Climate Change has said, will take "rapid, far-reaching and unprecedented changes in all aspects of society." And as the Biden administration has made clear, these changes can and must lift up workers, the poor, and redlined communities of color, who are already hit hardest by the fossil fuel economy and the impacts of a warming planet. Bold climate action can create millions of good, union jobs and make life better for all. And we already have the technologies we need to go all-in on the transition.

Here too, research at the Department of Energy has a crucial role to play. I am pleased that we are joined today by experts who can speak to the interdisciplinary research and new kinds of collaborations we need. That includes more integration with the social sciences, to help us deploy existing green technologies faster and better - in ways that promote justice and build community power. Let's learn by doing, and plug those lessons into science research and technology development as we go.

We also have distinguished witnesses present today who will discuss the climate science activities carried out by DOE's Biological and Environmental Research program. This research helps us understand complex Earth systems, the accelerating impacts of climate change, and how we can better protect people and infrastructure. It also aims to improve our understanding of regional differences in climate and Earth systems at a more granular level to help inform policymakers. This kind of data would be incredibly useful for my district, as I have seen firsthand how communities are dealing with climate impacts like flooding and extreme heat, which are compounded by failing infrastructure and other forms of environmental injustice.

One of the most important features of these programs are the operation and maintenance of state-of-the-art scientific user facilities. These facilities attract some of the world's most talented researchers from academia and industry. They range from giant synchrotron light sources to nanoscale research facilities, all of which are used to image and understand the fundamental properties of materials and chemical processes for a wide range of clean energy, medical, and other important applications. The Office of Science also supports field observatories around the world that measure atmospheric data that feed into climate models.

But the research infrastructure is only one piece of the puzzle. We need people - talented and trained professionals - to perform this research and help lead us into a green, just future. And we need to increase the participation of marginalized communities, including with STEM education infrastructure and workforce pipelines that will unleash the talents of students of color who have been neglected. This is a topic that is near and dear to my heart, and I am proud that this Committee is working to make our research activities more inclusive at every level through various legislative proposals.

I want to again thank our excellent panel of witnesses assembled today, and I look forward to hearing your testimony. With that, I yield back.