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:
Fostering a New Era of Fusion Energy Research and Technology Development

Wednesday, November 17, 2021

Good morning, and thank you to this excellent panel of witnesses who are joining us virtually today to discuss recent breakthroughs and next steps for the Department of Energy's fusion energy research activities.

As our witnesses will be able to discuss in much more detail, fusion is the process that powers the sun and the stars. It is a simple fact that this fundamental phenomenon is essential to existence of vital renewable energy sources like solar and wind energy, and indeed to life on earth. For many decades, top scientists around the globe have worked to find ways to replicate the conditions enabled by the immense, sheer gravity inside the core of a star to harness this potentially limitless source of clean energy more directly.

There have been challenges and setbacks along the way, and significant challenges remain on the path toward realizing this transformative goal. But we now have new reasons for hope, as well as comprehensive roadmaps driven by the research community to guide us on this path. On August 8th this past summer, the National Ignition Facility at DOE's Lawrence Livermore National Laboratory produced the first so-called "burning plasma" in a man-made experiment. A burning plasma is a condition in which the fusion process itself provides the primary heat source to sustain the fuel's high temperatures that keep the fusion process going. The achievement of a burning plasma is a critical step for the development of any viable fusion energy system.

And on September 5th, less than a month later, Commonwealth Fusion Systems and its partners at MIT achieved a successful test of a high-temperature, superconducting magnet up to a field strength of 20 tesla, the most powerful magnetic field of its kind ever created on earth. Such a magnet could enable fusion systems that are significantly smaller, lower cost, and faster to build than what was previously thought possible.

I am also pleased to highlight that the fusion research community has stepped up in recent years to produce a long-range strategic plan, which this Committee had directed the Department of Energy to initiate in the DOE Research and Innovation Act that was enacted in 2018. It is

important for us in Congress to have a far better understanding of how the community would prioritize research activities and facility construction plans under a range of plausible budget scenarios. I recognize that tough decisions were made by the community in carrying out this effort, and hope that this hard and thorough work is better recognized in DOE's forthcoming budget requests for these programs.

Thank you all again, and I look forward to this discussion.