COMMITTEE ON
SCIENCE, SPACE, & TECHNOLOGY
Lamar Smith, Chairman

For Immediate Release
March 6, 2018

Media Contacts: Thea McDonald, Brandon VerVelde
(202) 225-6371

Statement by Chairman Lamar Smith (R-Texas)

The Future of U.S. Fusion Energy Research

Chairman Smith: Today we will hear about the status of fusion energy research and the prospects of future scientific discoveries in fusion energy.

The basic purpose of fusion energy is to create the equivalent of the power source of a star here on earth. By creating and controlling the same nuclear reactions that occur in a star within a fusion reactor, heat from these reactions could be converted into renewable and reliable electricity. It is no surprise that fusion has captured the imagination of scientists and engineers for over half a century.

The Department of Energy (DOE) has supported basic research in fusion energy since 1951.

The DOE Office of Science Fusion Energy Sciences program funds research and science infrastructure at DOE national labs. At the Princeton Plasma Physics Laboratory, scientists conduct fusion research through the National Spherical Torus Experiment Upgrade (NSTX-U) user facility. NSTX-U is a magnetic confinement fusion device - called a spherical tokamak - that is currently the most powerful device of its kind in the world.

At Lawrence Livermore National Laboratory, the National Ignition Facility uses the world's largest and highest-energy laser to generate fusion power in the lab with an alternative technique called inertial confinement fusion.

DOE also funds world-class fusion research through its partnerships with industry. At General Atomics, a defense contractor based in California, the DIII-D National Fusion Facility is a tokamak fusion research facility that operates as a DOE User Facility through the Office of Science.

DIII-D enables scientists from laboratories, private sector organizations and universities around the world to carry out experiments in cutting-edge fusion research. Someday, the results of this research may provide the scientific foundation for producing power through fusion. This would obviously reduce carbon emissions by a significant amount with major implications for climate change.

The ultimate goal in fusion energy science is to provide a sustainable, renewable, zero emissions energy source. While we cannot predict when fusion will be a viable part of our energy portfolio, it is clear that this is critical basic science that could benefit future generations.

One major step toward achieving this goal is the ITER project. ITER is a multinational, collaborative effort to build the world's largest tokamak-type fusion reactor in southern France. Sponsored by the European Union, India, Japan, China, Russia, South Korea and the United States, the ITER project can help answer fundamental challenges in plasma physics and is a key step to achieving commercial fusion energy.

The director general of ITER, Dr. Bernard Bigot, will provide an update on the project's advances and challenges for the committee today. I want to specifically thank Dr. Bigot, for his leadership of this complex and challenging international research project.

By contributing nine percent of the cost to construct ITER, American scientists will be able to access 100 percent of the discoveries achieved through the project. That's why it is imperative that the U.S. meet its obligations to ITER and fully fund fusion research at the department.

According to the research community, a minimum of $163 million for in-kind contributions and $50 million in cash contributions in fiscal year 2019 is necessary to maintain the scheduled U.S. contribution to this project. Unfortunately, DOE's fiscal year 2019 budget request for ITER is only $75 million. Reduced annual funding will only delay ITER instruments being built here in the U.S. and cause construction delays that increase overall project cost.

With countries like India, Japan, China and Russia partnering through ITER to produce and share cutting edge fusion research, we cannot afford to lose our seat at the table. In addition, we cannot expect to receive international support for our domestically hosted global research projects, like the high priority Long-Baseline Neutrino Facility at Fermilab, if we do not honor our international obligations.

Basic research, like fusion science, provides the underpinnings for groundbreaking new energy technology. Achieving commercial fusion energy technology will require strong U.S. leadership and consistent investment in discovery science.

To maintain our competitive advantage as a world leader in science, we must meet our international commitments and continue to support the research that will lead to next generation energy technologies.

###