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**Position Statement on the
U.S. Department of Energy Fiscal Year 2016 Budget Request
submitted by
ASME Energy Public Policy Task Force**

April 6, 2015

Mr. Chairman, Ranking Member, and Members of the Subcommittee:

The ASME Energy Public Policy Task Force (Task Force) of ASME's Board on Government Relations is pleased to provide this testimony on the Fiscal Year 2016 (FY16) budget request for research and development (R&D) programs in the Department of Energy (DOE).

Introduction

ASME is a more than 130,000-member nonprofit, worldwide educational and technical Society. It conducts one of the world's largest technical publishing operations, holds more than 30 technical conferences and 200 professional development courses each year, and sets some 600 industrial and manufacturing standards, many of which have become *de facto* global technical standards.

ASME has long advocated a balanced portfolio of energy supplies to meet the nation's energy needs, including advancing clean coal, petroleum, nuclear, natural gas, waste-to-energy, biomass, solar, wind, and hydroelectric power technologies. ASME also supports energy efficient building and transportation technologies, as well as transmission and distribution infrastructure sufficient to satisfy demand under reasonably foreseeable contingencies. A balanced energy portfolio will allow the U.S. to maintain its quality of life while addressing our environmental and security challenges. Sustained growth in the energy systems on which the U.S. depends will also require stability in licensing and permitting processes not only for power generating stations but also for transmission and transportation systems.

Electricity Delivery and Energy Reliability

The FY16 budget request of \$270 million for Electricity Delivery (OE) is a \$123 million, or 84 percent, increase over the FY15 appropriated amount of \$147 million. The Task Force is pleased by the level of interagency coordination being led by OE, particularly related to transmission siting, cyber security, FEMA, and the Department of Defense.

The Task Force believes advances in power electronics, micro-grids, systems integration, controls, and modeling and simulation are going to be critical in a future more modern electric grid. We are pleased to see that the OE budget seeks robust support for the Smart Grid Research

and Development area. Similarly, the Task Force fully supports the large increased request of \$14 million for Infrastructure Security and Energy Restoration.

Fossil Energy

We are pleased that the Administration has requested a \$44 million (or 75 percent) increase for the Natural Gas Technologies program in FY16. We recommend that the Unconventional Fossil Energy Technologies program be restored to its FY 2014 enacted level of \$15 million, an increase of \$15 million over the Administration request. The U.S. has access to significant unconventional gas and liquid petroleum resources with the potential to provide an abundant, affordable, and environmentally sound energy source for years to come. Prior FE R&D has contributed to making this possible through multidisciplinary and cross-agency funded research. However, the potential for environmentally responsible unconventional oil and gas energy development will not be realized unless our nation makes the investments to ensure that these resources can be produced reliably, economically, safely, and with minimal environmental impact. Accomplishing this task and keeping the U.S. in the forefront of unconventional fossil energy technology will require basic research, technology development, and advances in low impact environmental technologies that will not be undertaken by industry in the current economic climate.

The Task Force recommends funding the Coal CCS and Power Systems program at \$450 million, an increase of \$81 million over the President's request and \$50 million over the level enacted for FY15. Coal is, and will remain, a critical resource for our nation and the global energy economy. We must continue to invest in research that will reduce coal's environmental impacts and to retain our global leadership in coal-based technology. New systems such as pressurized oxycombustion and chemical looping combustion must be deployed in the 2025 time frame to retain coal in our national power generation mix, given the rise in the use of natural gas for power generation. The \$50 million recommended increase for coal programs over the FY 2015 enacted level should be directed toward larger scale demonstration projects to shorten the development period for deploying new technologies. We further recommend increasing coordination between the ARPA-E and Fossil Energy programs to ensure the development of newer technologies that can further decarbonize fossil fuels to take advantage of our nation's abundant resources.

Advanced Research Projects Agency-Energy (ARPA-E)

The Task Force strongly supports the \$325 million budget request for the Advanced Research Projects Agency-Energy (ARPA-E), a \$45 million or 16 percent increase over the FY15 appropriated amount. ARPA-E received its first funding as part of ARRA, but has stood out quickly among its fellow DOE programs. ARPA-E has already spun out over 30 new energy companies and represents a significant opportunity for the U.S. to cultivate technological breakthroughs related to energy sources, and uses. A steady commitment to ARPA-E has begun to encourage new energy technology innovation and the Task Force believes that this is a worthwhile endeavor for the DOE as we seek to accomplish technological breakthroughs in energy technology research.

Nuclear Energy

Total funding for the DOE Office of Nuclear Energy for FY16 would rise to \$907 million, a 9 percent increase over the FY15 enacted amount of \$833 million. The Task Force remains

convinced that nuclear energy will hold an important role in the nation's energy future. While funding for SMR Licensing and Technical Support has received a strong request, programs like Reactor Concepts (slated for a 19 percent budget cut) and Fuel Cycle R&D need sustained funding to aid the nation's transition to a low-carbon energy future. Reactor Concepts is a particularly critical program as the commercial nuclear reactor fleet faces life extension challenges. Lack of funding for this type of research in nuclear energy may adversely impact the ability of the current US fleet to continue to operate past its 60 year life. The loss of funding may also contribute to the loss of the US nuclear technology competitive edge in developing the nuclear technologies of the future.

Energy Efficiency and Renewable Energy

The Office of Energy Efficiency and Renewable Energy (EERE) manages America's investments in research, development and deployment of DOE's diverse energy efficiency and renewable energy applied science portfolio. The FY16 budget request of \$2.72 billion, an \$808 million, or 42 percent, increase over the FY 2015 appropriated amount of \$1.9 billion, demonstrates the Administration's strong commitment to clean energy technology development. Most of the key EERE programs, including Bioenergy, Solar, Wind, Geothermal, Building Technologies, Vehicle Technologies, and Advanced Manufacturing technologies, receive substantial increases in funding to support the growth of renewable energy and energy efficiency.

The Task Force is particularly pleased to see large increases for both the Advanced Manufacturing program (\$404 million, or a 102 percent increase), as well as the Building Technologies Program (\$264 million, or a 53 percent increase). The budget for Vehicle Technologies R&D is slated to receive a \$164 million increase to \$444 million for FY16. The Task Force also believes that the development of transportation fuel systems that are not petroleum-based is a critical part of our future national energy policy.

The integration of all cost effective electric generating and storage technologies into the operation of the electricity distribution system is critical to economic operation of the national electric grid. The Task Force believes that R&D related to the integration of the electric grid and its control as a truly national system is imperative for the growth of effective and economic energy generation technologies and we encourage full funding for such research.

Science

The mission of the Office of Science (SC) is the delivery of scientific discoveries and major scientific user facilities and tools to transform our understanding of nature and to advance the energy, economic, and national security of the United States. The FY16 budget proposal of \$5.3 billion is an increase of \$272 million, or 5.4 percent, from the FY15 appropriation. The Task Force encourages Congress to fully support funding for SC programs in the FY16 budget.

As successive budget cycles come and go, the nation is getting further away from the funding trajectories necessary to sustain long-term energy innovation. Science programs in high energy physics, fusion energy sciences, biological and environmental research, basic energy sciences, and advanced scientific computing, serve, in some small way, every student and research institution in the country. These funds support not only research at the DOE Laboratories, but also the work at a large number of researchers from other federal agencies, universities and

colleges, and companies that use our national lab system's instruments for cutting edge research across a wide array of disciplines.

Other DOE Programs

DOE is also very active in areas outside of R&D. The environmental remediation program that funds the decommissioning and decontamination of old DOE facilities is one such research area. The Task Force urges close oversight of funding for the Environmental Management program, requested at 5.8 billion for FY16, a 0.7 percent reduction.

Conclusion

Members of the Task Force consider the issues related to energy to be one of the most important issues facing our nation. There is an urgent need for more coherent national energy policies. The Task Force is concerned that without a National Energy Policy, proposed and ongoing research will not be utilized to its full potential. We applaud the Administration and Congress for their understanding of the important role that scientific and engineering breakthroughs will play in meeting our energy challenges. To promote such innovation, strong support for energy research will be necessary across a broad range of technology options. DOE research can play a critical role in allowing the U.S. to use our current resources more effectively and to create more advanced energy technologies.

Thank you for the opportunity to offer testimony regarding both the R&D and other parts of the proposed budget for the DOE. The Task Force is pleased to respond to requests for additional information or perspectives on other aspects of our nation's energy programs.

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This statement represents the views of the Energy Public Policy Task Force of ASME's Board on Government Relations and is not necessarily a position of ASME as a whole.