

## Testimony of R. Neal Elliott, Ph.D., P.E.

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SUBCOMMITTEE ON ENERGY AND WATER DEVELOPMENT AND RELATED AGENCIES OF THE U.S. HOUSE  
COMMITTEE ON APPROPRIATIONS

APPROPRIATIONS FOR THE U.S. DEPARTMENT OF ENERGY ADVANCED MANUFACTURING OFFICE FOR FISCAL  
YEAR 2021 IN THE AMOUNT OF \$395,000,000

MARCH 31, 2020

### Summary

We strongly support a broad range of energy efficiency programs. This testimony focuses on specific recommendations for the Department of Energy's Advanced Manufacturing Office. AMO's programs are highly capable and well positioned to play an important role in reducing emissions of greenhouse gases (GHG) from the industrial sector. AMO can deliver near-term reduction in industrial consumption of fossil fuels and electricity through aggressive pursuit of energy efficiency, for example through technical assistance. For long-term reductions, AMO is well suited to develop and commercialize transformative process technologies and new, low-GHG embodied products. AMO should expand research and implementation efforts on technologies, processes and products as well other strategies.

### Introduction

Thank you for the opportunity to testify on energy efficiency appropriations. The American Council for an Energy-Efficient Economy (ACEEE), a nonprofit 501(c)(3) organization, acts as a catalyst to advance energy efficiency policies, programs, technologies, investments, and behaviors. We produce more than 30 reports and other research products each year on energy-saving technologies, programs, and policies. We have a long history providing input to Congress, federal agencies and state and local policy makers based on our research. ACEEE has been involved in industrial energy policies for over three decades.

The U.S. Department of Energy's Advanced Manufacturing Office (AMO) plays an important role in advancing energy efficiency and the competitiveness of U.S. manufacturing. AMO is the primary federal industrial research and technology office. With increasing concerns about climate change, AMO's programs are well positioned to play an important role in reducing emissions of greenhouse gases (GHG) from the industrial sector. AMO's capabilities and relations with companies and stakeholders within the industrial sector are uniquely valuable for this effort.

AMO (under a series of names) has led the effort to reduce fossil fuel and electricity consumption in the industrial sector for decades. Looking forward, near-term reduction in industrial consumption of fossil fuels and electricity will yield a significant, sizeable reduction in GHG emissions. Our recent report, *Halfway There*, notes that aggressive pursuit of energy efficiency could cut US GHG emissions in half by mid-century, including a 30% cut in industrial

emissions.<sup>1</sup> To deliver the remaining needed reductions in GHG, we need to develop and commercialize transformative process technologies and new, low-GHG embodied products. Hence, AMO needs to expand research and implementation efforts on technologies, processes and products as well other strategies such as low-GHG fuels such as renewable methane and hydrogen, beneficial electrification, and the capture and utilization of carbon dioxide (CCU) from industrial processes and fossil fuel combustion.

AMOs' technical assistance work plays an important role in supporting companies to implement measures that reduce energy consumption and GHG emissions, such as the Better Plants program and Combined Heat and Power (CHP) Technical Assistance Partnerships (TAPs). In addition, AMO has been a leader on strategic energy management for two decades with programs such as 50001 Ready. Finally, the Industrial Assessment Centers (IACs) play a dual role of providing non-cost technical assistance to small and medium-sized manufactures while training the next generation of industrial energy engineers.

Together these efforts form the foundation of our national industrial sustainability efforts. ACEEE notes that many of these immediate actions to reduce GHG emissions could be undertaken within existing authorizations. We encourage the Committee to robustly fund the AMO and provide direction to the Secretary to refocus the office's activities to respond to the challenges of pursuing step-change reduction in GHG emissions from the industrial sector.

We thank the Committee for the opportunity to provide these comments and welcome any questions or requests for addition information that may assist the Committee in its deliberations.

## Recommended Committee Language

Please find below ACEEE's recommended language for the AMO's FY2021 appropriations:

**ADVANCED MANUFACTURING** The Committee recommends \$395,000,000 for Advanced Manufacturing. The Committee recommends \$25,000,000 for the fifth year of research and development efforts to lower the cost and energy intensity of technologies to provide clean, safe water through the Energy-Water Desalination Hub. The Committee recommends \$25,000,000 for the Manufacturing Demonstration Facility (MDF) and the Carbon Fiber Technology Facility. Within available funds for MDF, \$5,000,000 is provided for the development of additive systems and automation technologies. The Committee recommends \$5,000,000 for dynamic catalyst science coupled with data analytics. The Committee recommends \$14,000,000 for a second year of the Cybersecurity Institute for Energy Efficiency Manufacturing. The Committee is concerned that the Department has not selected an applicant to manage this institute and urges the Secretary to complete the process as soon as possible.

Within available funds, the agreement supports funding for Advanced Manufacturing Research and Development, with a focus on industrial decarbonization and on catalyzing industry-government research partnerships. The research and development

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<sup>1</sup> Nadel, S., Unger, L., *Halfway There: Energy Efficiency Can Cut Energy Use and Greenhouse Gas Emissions in Half by 2050*, ACEEE, 2019. <https://aceee.org/fact-sheet/halfway-there>

shall include carbon-dioxide capture, utilization, and storage (CCUS) within industry processes and materials with an emphasis on reuse utilization; low-carbon fuels (e.g. hydrogen); transformative technology that will allow deep decarbonization of industrial facilities (including demonstration and deployment at scale); materials efficiency and circular economy; and research into carbon intensity definitions and data, and development of voluntary labeling across key manufactured product groups.

The Committee recommends \$45,000,000 for the Industrial Technical Assistance program. Within this amount, the Committee recommends \$12,000,000 for 32 Industrial Assessment Centers in order to further reach underserved areas and begin planning for further expansions on the program in future fiscal years. And the Committee recommends \$10,000,000 to continue a voluntary technical assistance initiative to assist the largest energy intensive manufacturing facilities, leveraging resources within the department to reduce greenhouse gas emissions from these facilities through energy efficiency, energy management and fuel substitution. The Committee also recommends \$12,000,000 to provide ongoing support for the Combined Heat and Power (CHP) Technical Assistance Partnerships (TAPs) and related CHP Technical Partnership activities at the Department, including \$5,000,000 for the TAPs and \$7,000,000 for related CHP activities. The department is encouraged to focus CHP TAPs activities on thermal integration at large greenhouse gas emitting industrial plants. The Committee also encourages the Department to prioritize research, development, and demonstration of district energy systems in communities, campuses, industries, and cities nationwide by supporting adaptive regional and local technology, and market opportunities. The Committee recommends \$5,000,000 for wastewater treatment technical assistance.

The Committee finds that current vacancies in Advanced Manufacturing Office staffing are impeding the ability of the program to fully implement the directions of the Committee and to contract for recommended activities in a timely manner. The Committee calls upon the Secretary to aggressively pursue filling all vacant positions in the office as soon as possible.

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