

Congress of the United States

House of Representatives

COMMITTEE ON SCIENCE, SPACE, AND TECHNOLOGY

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MEMORANDUM

TO: Committee on Science, Space, and Technology Members and Staff
FROM: Science, Space, and Technology Committee Staff
DATE: July 23, 2014
RE: Committee on Science, Space, and Technology Markup

The Committee on Science, Space, and Technology will meet on **Friday, July 25 at 9:30 a.m.** in Room 2318 of the Rayburn House Office Building to consider the following:

H.R. 2996, the Revitalize American Manufacturing and Innovation Act of 2014 and An Amendment in the Nature of a Substitute to H.R. 2996

Background

Manufacturing has been a significant part of American productivity since the industrial revolution. Manufacturing's share of gross domestic product is approximately 11 percent, and manufacturing output has risen by 13 percent in the last several years. However, employment in the manufacturing sector as a share of the economy is significantly lower than in the post-World War II era. Despite some modest increases recently, American manufacturing has seen large employment declines since 2000.^{1,2,3} Some reports have cited declines in manufacturing employment as an indicator of a decrease in U.S. economic competitiveness, while others suggest that declines are primarily attributed to increases in productivity.^{4,5}

Most analysts agree that manufacturing continues to be an important part of the American economy. Manufacturing is generally more research and development intensive than other sectors of the economy, and therefore more closely tied to the Nation's innovative capacity.^{6,7}

¹ Made in America, Again, August 2011, Boston Consulting Group.

² Manufacturing's Secret Shift: Gaining Competitive Advantage by Getting Closer to the Customer; March 2011, Accenture

³ Bureau of Labor Statistics, <http://www.bls.gov/data/>.

⁴ S. Ezell and R. Atkinson, "The Case for a National Manufacturing Strategy," April, 2011, The Information Technology and Innovation Foundation. <http://www.itif.org/files/2011-national-manufacturing-strategy.pdf>

⁵ Council on Competitiveness Report, Make: An American Manufacturing Movement, December 2011, <http://www.compete.org/publications/detail/2064/make/>

⁶ OECD Science, Technology and R&D Statistics <http://www.oecd-ilibrary.org/content/data/data-00183-en>

The National Network for Manufacturing Innovation (NNMI)

The President's FY13 and FY14 budget requests included a proposal for a one-time mandatory fund of \$1 billion to establish the National Network for Manufacturing Innovation (NNMI), a public-private partnership of competitively-selected institutes that would each concentrate on a particular area of advanced manufacturing technology development. According to background information provided by the Administration, the goal of the institutes is to "bring together industry, universities and community colleges, federal agencies, and regional and state organizations to accelerate innovation by investing in industrially relevant manufacturing technologies with broad applications, and to support manufacturing technology commercialization by bridging the gap between the laboratory and the market."⁸

The NNMI also includes an emphasis on education and workforce development in advanced manufacturing skills. The Administration proposed up to 15 institutes across the country, with the federal support to last 5-7 years. The Committee on Science, Space and Technology held a hearing to review the Administration's NNMI proposal in the 112th Congress.⁹

In August 2012, the Administration announced a pilot manufacturing institute, the "National Additive Manufacturing Innovation Institute (NAMII)," based in Youngstown, Ohio to accelerate and integrate additive manufacturing technologies to the U.S. manufacturing sector and to increase domestic manufacturing competitiveness. The pilot institute was established by reprogramming \$30 million in appropriations for the Department of Defense (DOD), the Department of Energy (DOE), NASA, NSF and other federal agencies.

In the 2013 State of the Union Address, the President announced plans for three additional manufacturing institutes to be funded through DOD and DOE appropriations, which were subsequently awarded in 2013:

- Digital Manufacturing & Design Innovation Institute, led by an Illinois consortium led by UI Labs
- Lightweight & Modern Metals Manufacturing Innovation (LM3I) Institute, led by a Michigan-headquartered consortium of businesses and universities
- Next Generation Power Electronics National Manufacturing Innovation Institute, to be developed by a consortium of businesses and universities led by North Carolina State University

The White House subsequently announced plans for additional awards in 2014 and has issued solicitations for proposals for the Clean Energy Manufacturing Innovation Institute for Composites Materials and Structures and a Department of Defense Request for Information from Industry and Academia, as part of an effort to determine technology focus areas for future Institutes for Manufacturing Innovation.

⁷ S. Ezell and R. Atkinson, "The Case for a National Manufacturing Strategy," April, 2011, The Information Technology and Innovation Foundation. <http://www.itif.org/files/2011-national-manufacturing-strategy.pdf>

⁸ National Network for Manufacturing Innovation <http://www.manufacturing.gov/amp/nnmi.html>

⁹ "Technology and Innovation Subcommittee Hearing - Examining the Proposed National Network for Manufacturing Innovation". May 31, 2012.

<http://science.house.gov/hearing/technology-and-innovation-subcommittee-hearing-assembling-facts-examining-proposed-national>

Legislative History

In early August, Rep. Tom Reed (NY) and Rep. Joe Kennedy (MA) introduced H.R. 2996, the “Revitalize American Manufacturing and Innovation Act of 2013,” to authorize the creation of a Network for Manufacturing Innovation Program, based on the President’s NNMI proposal.¹⁰ H.R. 2996 would authorize \$600 million instead of \$1 billion as requested in the President’s proposal.

A hearing on H.R. 2996 was held on December 12, 2013 by the Research and Technology Subcommittee of the House Science, Space and Technology Committee. Sen. Sherrod Brown (OH) and Sen. Roy Blunt (MO) introduced a companion measure, S. 1468, the “Revitalize American Manufacturing and Innovation Act of 2013,” in the Senate. An amended version of this legislation was approved by the Senate Commerce Committee on April 9, 2014. No further action has been taken.

Major Provisions of H.R. 2996

H.R. 2996 would support a Network for Manufacturing Innovation (NMI) Program within NIST to improve American manufacturing competitiveness; stimulate innovation; facilitate transition of novel technologies to commercialization; accelerate workforce development; and leverage non-Federal capital.

The bill would fund Centers for Manufacturing Innovation (CMI) to address challenges in advanced manufacturing and focus on manufacturing processes, new materials or technologies, and supply chain methodologies. CMIs would include active participation from industry, research universities, community colleges, and other entities. Activities of the CMIs include research and development, proof-of-concept and prototyping, and reducing the cost, time, and risk of commercialization of new technologies and processes. CMIs would also develop education and training programs and conduct outreach and engagement with small and mid-size businesses. Existing manufacturing centers, including the National Additive Manufacturing Innovation Institute, would be considered part of the NMI.

Under the bill, federal funding for CMIs would be awarded by the Secretary to assist in the planning, establishment, and support of centers through an open, merit-based application process. Federal funding to Centers will be limited to seven years, after which Centers will need to be self-sustaining.

H.R. 2996 would fund a National Program Office to carry out the planning, management and coordination of the centers for innovation. The Office would coordinate with other federal agencies engaged in advanced manufacturing including: DOD, Education, DOE, NASA, NSF and NIST. Within one year, the program offices must develop a strategic plan to guide the entire program. The Office is to work with the Hollings Manufacturing Extension Partnership programs in order to coordinate and avoid duplication of efforts.

¹⁰ Text available at: <http://congress.gov/cgi-lis/query/z?c113:H.R.2996>:

Amendment in the Nature of a Substitute

At the July 25, 2014 mark-up, Science Committee Chairman Lamar Smith and Rep. Joe Kennedy will offer an amendment in the nature of a substitute (ANS) for H.R. 2996. The ANS makes several changes in H.R. 2996 to strengthen certain policy aspects of the measure and assure that it would not increase the federal deficit. The ANS also includes two related sections: strategic planning to coordinate government policies and programs for advanced manufacturing, and changes to the Regional Innovation Program.

The ANS parallels H.R. 2996 in its creation of a Network for Manufacturing Innovation at NIST and authorizing NIST to carry out competitive, merit-based selection of non-profit manufacturing innovation centers. Maximum funding for this program is up to \$300 million over 10 years. There is no authorization of appropriations. The Secretary of Commerce is authorized to use up to \$5 million per fiscal year in NIST appropriations for fiscal years 2015 – 2024 to carry out the program. Also, in order to carry out the program, the Secretary of Energy is authorized to transfer up to \$25 million per fiscal year, for fiscal years 2015 – 2024, from funds appropriated for advanced manufacturing research and development under the Department of Energy's Energy and Efficiency and Renewable Energy account.

Advanced Manufacturing Strategic Planning

Section 4 of the ANS amends the America COMPETES Reauthorization Act of 2010 to require a Committee established under the National Science and Technology Council, in consultation with the National Economic Council and various public and private stakeholders, to develop and update a strategic plan to provide guidance for to Federal programs and activities in support of U.S. advanced manufacturing competitiveness. This section specifies a schedule for updating the strategic plan. This section requires the President to include information regarding the consistency of the budget with the goals and recommendations included in the strategic plan developed under this section. This section requires the Advanced Manufacturing Partnership Steering Committee of the President's Council of Advisors on Science and Technology to provide input, perspective, and recommendations to assist in the development and updates of the strategic plan under this section.

Regional Innovation Program

Section 5 of the ANS amends the Section 23 of the Stevenson-Wydler Act. The Secretary of Commerce is authorized to use up to \$10 million per fiscal year during fiscal years 2015 – 2024 to award funds for the Regional Innovation Program. There is no authorization of appropriations. The Secretary is required to conduct outreach to rural communities and stakeholders regarding program participation.