U.S. DEPARTMENT OF ENERGY | Energy Efficiency & Renewable Energy

CLEAN ENERGY MANUFACTURING INITIATIVE

The Clean Energy Manufacturing Initiative is a strategic integration and commitment of manufacturing efforts across the Office of Energy Efficiency & Renewable Energy's (EERE) technology offices, including its Advanced Manufacturing Office, focusing on American competitiveness in clean energy manufacturing.

The initiative will strategically focus and rally EERE's technology offices around the urgent competitive opportunity for the United States to be the leader in the clean energy manufacturing industries and jobs of today and tomorrow. This initiative will bring together a wide array of relevant EERE and Department of Energy offices, federal agencies, research institutions, and private sector partners to map out a strategy and provide the resources to ensure that U.S. manufacturers are competitive in the global marketplace.

Initiative Objectives

- **Increase U.S. competitiveness in the production of clean energy products:** Strategically invest in technologies that leverage American competitive advantages and overcome competitive disadvantages.
- **Increase U.S. manufacturing competitiveness across the board by increasing energy productivity:** Strategically invest in technologies and practices to enable U.S. manufacturers to save money and increase their competitiveness through energy efficiency, combined heat and power, and taking advantage of low-cost domestic energy sources.

The Opportunity in Clean Energy Manufacturing

After decades of targeted EERE investments in energy technology R&D, our nation finds itself at a unique moment in our energy history where a wide array of clean energy technologies are now within 5 to 10 years of being directly cost competitive without subsidies. This represents a major opportunity for U.S. clean energy manufacturing leadership. Globally, investment in the clean energy sector has risen nearly fivefold in recent years, growing from $54 billion in 2004 to $269 billion in 2012.[1]

> "The path towards sustainable energy sources will be long and sometimes difficult. But America cannot resist this transition; we must lead it. We cannot cede to other nations the technology that will power new jobs and new industries—we must claim its promise."
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> —President Obama, Inaugural Address 2013

The newly commissioned Carbon Fiber Technology Facility will begin R&D on manufacturing carbon fiber (above) with experimental precursors through partnerships between ORNL and several carbon fiber companies. *Photo from Oak Ridge National Laboratory*

Trillions more will be invested in the decades to come. The economic benefits of this growing market will go to the country that can translate cutting-edge R&D into sustained manufacturing at home. Our nation faces a stark choice: the energy technologies of the future can be developed and manufactured in America for export around the world, or we can cede global leadership and import these technologies from other nations.

The American manufacturing sector as a whole is a significant and strategic sector for U.S. competitiveness. This sector fuels 12% of U.S. GDP[2] and is disproportionately important to the technological leadership of the nation, accounting for 70% of private sector R&D investment[3] and 60% of exports.[4]

It is crucial that we leverage energy-saving manufacturing innovations and practices to benefit the manufacturing sector as a whole, including investments in advanced manufacturing R&D that give the United States a unique technological advantage and investments that help manufacturers to grow their energy productivity and become more energy competitive.

1 "Who's Winning the Clean Energy Race?" Pew Charitable Trusts, April 2012. http://www.pewtrusts.org/uploadedFiles/wwwpewtrustsorg/Reports/Clean_Energy/Clean%20Energy%20Race%20Report%202012.pdf.
2 Bureau of Economic Analysis, 2011. http://www.bea.gov/index.htm.
3 Wolfe, Raymond M. "U.S. Businesses Report 2008 Worldwide R&D Expense of $330 Billion: Findings from New NSF Survey." National Science Foundation (10-322), 2010. Accessed March 20, 2013: http://www.nsf.gov/statistics/infbrief/nsf10322/nsf10322.pdf.
4 "U.S. International Trade in Goods and Services." U.S. Census Bureau and U.S. Bureau of Economic Analysis, 2011. http://www.census.gov; http://www.bea.gov/index.htm.

What is Clean Energy Manufacturing?

- **The production of competitive clean energy products:** Clean energy products save energy through higher efficiency or generate renewable energy. Examples include wind turbines, solar panels, and energy-efficient appliances, light bulbs, and vehicles—in addition to their component parts and materials.
- **Activities and technologies that strengthen competitiveness across multiple manufacturing industries through increased energy productivity:** Such activities include the use of advanced manufacturing technologies and practices, the implementation of energy efficiency measures, the capture of combined heat and power opportunities by the manufacturing sector, and taking advantage of low-cost domestic energy sources to grow production, while using less energy and saving money.

Highlights

Highlights of EERE resources for manufacturers are summarized below. Please see *eere.energy.gov/energymanufacturing* for more details and information on how to apply.

- **Increased funding for manufacturing R&D across the board,** specifically with the goal of growing the clean energy manufacturing industry in the United States.
- **Facilities for Manufacturing Innovation & Demonstration** that provide a physical center and set of resources for the development, demonstration, and education and training of new manufacturing technologies and techniques in collaboration with universities, public and private sectors, and educational institutions of all levels.

  Current facilities include:

  - **The pilot Institute in the National Network for Manufacturing Innovation (NNMI)—**the National Additive Manufacturing Innovation Institute in Youngstown, Ohio.
  - **The Manufacturing Demonstration Facility at Oak Ridge National Laboratory.**

  New Opportunities include:

  - **A new Institute in the NNMI on Wide Band Gap Power Electronic Devices**, which is now open for proposals.
- **Increased EERE focus on energy productivity resources for manufacturers,** including refocused technology investment and policy analysis along with a suite of technical assistance and market leadership programs. This includes **Industrial Assessment Centers** that offer no-cost energy efficiency assessments for manufacturers and the new **Better Plants Challenge,** which engages U.S. manufacturers to reduce energy use by 25% over 10 years. Eleven companies have taken the challenge, including 3M, GE, and JR Simplot. New opportunities in 2013 include **Combined Heat and Power Technical Assistance Partnerships,** which will provide technical assistance to companies for the implementation of Combined Heat and Power technologies and resources.
- **Development of competitiveness analysis and strategies** that inform R&D investments and other efforts needed to address key barriers to growing U.S. clean energy manufacturing competitiveness. This unprecedented competitiveness analysis evaluates the costs of producing clean energy products in the United States compared to competitor nations to understand factory location decisions, and identify key drivers to U.S. clean energy manufacturing competitiveness.
- **Regional and National Summits** to gain input on national and regional priorities, identify key gaps and opportunities for growing U.S. clean energy manufacturing competitiveness, showcase U.S. clean energy manufacturing activity, and explore national and regional models addressing these priorities.
- **New Partnerships** to improve U.S. clean energy manufacturing competitiveness. Growing U.S. clean energy manufacturing competitiveness requires an "all hands on deck" approach, with the nation's private and public sectors, universities, think tanks, and labor leaders working together to identify and commit to a path forward. Initial partnerships include:
  - **Council on Competitiveness Partnership:** A partnership with the nation's private and public sector leaders on energy and manufacturing competitiveness.
  - **Advanced Manufacturing National Program Office:** A partnership to provide resources and to collaborate with other agencies on the creation of the NNMI.
  - **Trade Promotion and Coordinating Committee:** A partnership with the interagency task force that ensures the coordination and development of a government-wide export promotion plan and provides access to federal trade resources such as the Export-Import Bank, Overseas Private Investment Corporation, and trade missions.

The Nation's First NNMI Institute

Now accepting applications in wide band gap power electronic devices

EERE is proud to support the National Network for Manufacturing Innovation (NNMI)—as announced by President Obama during the State of Union—by creating one of the first Institutes in the NNMI, which will focus on wide band gap power electronic devices.

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For more information, visit:
eere.energy.gov/energymanufacturing

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