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

ADVANCED MANUFACTURING OFFICE FY 2015 BUDGET AT-A-GLANCE

The Advanced Manufacturing Office (AMO) partners with industry, small business, universities, and other stakeholders to identify and invest in emerging technologies with the potential to create high-quality U.S. manufacturing jobs, enhance global competitiveness, and reduce energy use by encouraging a culture of continuous improvement in corporate energy management.

What We Do

The Advanced Manufacturing Office uses an integrated approach that relies on three pillars to deliver energy and consumer cost savings:

- ✓ **Next Generation Manufacturing R&D Projects** will focus on the development of industry-specific and cross-cutting manufacturing technologies to dramatically improve U.S. transition from laboratory invention to domestically manufactured products.
- ✓ **Advanced Manufacturing R&D Facilities** will support the creation of Clean Energy Manufacturing Innovation Institutes consistent with the President's vision for a larger multi-agency National Network for Manufacturing Innovation (NNMI). These are shared research facilities where industry and research institutions come together to develop and leverage cutting-edge cross-cutting advanced manufacturing capabilities to develop high-impact commercial manufacturing innovations.
- ✓ **Industrial Technical Assistance** will support the deployment of energy-efficient manufacturing technologies and practices, including strategic energy management and combined heat and power, across American small, medium and large firms through corporate commitment engagement, tools and training, site assessments, and expert advice.

Program Goals/Metrics

- Develop industry-specific and cross-cutting foundational manufacturing technologies to assist U.S. industry reduce its energy intensity by 2.5% per year (EPACT 2005).
- Reduce life-cycle energy use by 50% in manufacturing processes and products through technology RD&D.
- Develop, demonstrate, and assist industry with adoption of cost-competitive combined heat and power (CHP) technologies (supporting EO 13624) towards a national goal of 40 GW of new CHP by 2020.
- Demonstrate technical and economic viability of energy management approaches building off of ISO 50001.
- Establish a total of at least three Clean Energy Manufacturing Institutes as the DOE-led component of the National Network for Manufacturing Institutes (NNMI).

FY 2015 Priorities

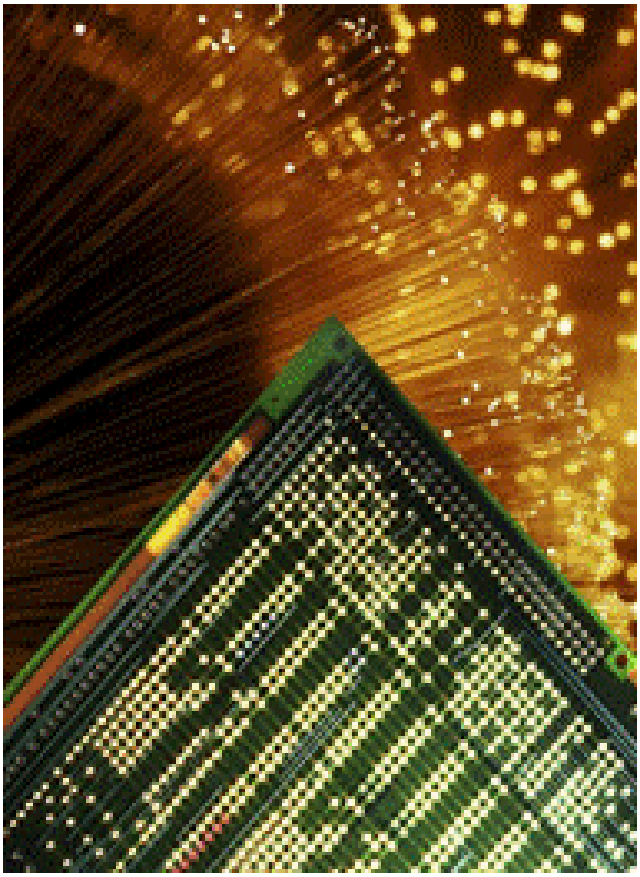
- **Individual High-Impact Foundational R&D Projects and Incubator** will invest in high-impact materials and process technologies with potential to drive energy productivity and domestic manufacturing competitiveness. A key highlight will be an Advanced Manufacturing Incubator to work closely with small and medium-sized firms to accelerate the transition of foundational technologies to domestic manufacturing with a goal of significant energy and economic impact.
- **Clean Energy Manufacturing Institutes and R&D Facilities** will focus on accelerating the development of cutting edge technologies in areas such as wide bandgap power electronics, carbon fibers, composites, advanced materials development, smart and modular manufacturing, and additive manufacturing.

(Dollars in Thousands)	FY 2013 Current	FY 2014 Enacted	FY 2015 Request
Next Generation Manufacturing R&D Projects	41,745	76,971	86,000
Advanced Manufacturing R&D Facilities	55,009	81,500	190,500
Industrial Technical Assistance	17,500	22,000	28,500
NREL User Facility	0	0	100
Total, Advanced Manufacturing	**114,254**	**180,471**	**305,100**

- **Transformation of Industrial Technical Assistance** helps manufacturers establish energy savings targets and improve energy management with significant energy savings, as well as train the next generation of energy engineers. Critical to this effort will be an in-depth, transparent, and replicable quantitative analysis and quantification of program impacts as well as an enhanced integration of technical assistance program components.

Key Accomplishments

- Led Department of Energy contribution to the establishment of the National Network for Manufacturing Innovation (NNMI), including support for the pilot National Additive Manufacturing Innovation Institute (NAMII), known as AmericaMakes in Youngstown, OH. In its first year of operation, AmericaMakes has already enlisted 92 partners in a membership consortium.
- Led by Ames Laboratories, the Critical Materials Institute (CMI) is a five-year investment of up to $120 million to improve supply, efficient use and recycling to reduce dependence on foreign supplies, such as rare earths, for clean energy applications. In its first year of operation, CMI researchers have already filed seven patent disclosures.
- Launched 18 Innovative Manufacturing Initiative projects in partnership with industry, co-investing $77.5 million in pre-competitive, foundational manufacturing technologies that have the potential to yield significant improvements in energy productivity, product yield, and cross-cutting economic benefits.
- As part of the Better Building, Better Plants Program, more than 125 Program Partners -- representing close to 1,800 plants and over 8% of the total U.S. manufacturing energy footprint -- have committed to reduce their energy intensity by 25% over 10 years. As of October 2013, Partners have saved about 190 trillion Btu and $1 billion.
- Between FY 2009 and 2013, centers provided technical support to over 590 CHP projects. About 350 of those projects received Technical Site Evaluations (either alone or in conjunction with other support) and the remaining projects were provided with other types of technical assistance, often on multiple occasions. Of those projects, more than 190 are currently under development or online with a combined capacity of 1.54 GW.
- Industrial Assessment Centers located within accredited engineering programs at 24 universities around the country conduct energy audit assessments to identify opportunities to save energy, improve productivity, and decrease waste at small and medium-sized manufacturers. On average, each manufacturer identifies about $140,000 in potential annual energy savings and implements more than one-third of these within the first year of the assessment. Since 2006, Centers have conducted more than 3,300 assessments that have identified nearly $600 million in savings opportunities and nearly 4 million metric tons in CO_2 emissions reductions. Over one-third of these identified savings have been implemented to date.



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