



Additive manufacturing is just one of several technologies advanced by the Energy Department's Clean Energy Manufacturing Initiative (CEMI).  
*Photo credit: Oak Ridge National Laboratory*

The Clean Energy Manufacturing Initiative (CEMI) is a U.S. Department of Energy (DOE)-wide commitment to innovation and breaking down market barriers in order to enhance U.S. manufacturing competitiveness while advancing the nation's energy goals.

### THE OPPORTUNITY OF CLEAN ENERGY MANUFACTURING

By 2030, the global market for new energy generation technology is expected to reach \$790B annually—an \$11 trillion cumulative investment from 2013. Leveraging energy productivity and domestic energy resources in manufacturing represents important opportunities for U.S. manufacturers to enhance their global competitiveness by realizing lower energy costs. A focus on increased energy productivity will save manufacturers billions of dollars, grow the economy, reduce the nation's emissions and energy consumption, and enhance energy security.

Enhancing U.S. competitiveness in manufacturing clean energy technologies can also boost the economy and contribute to energy security. Moreover, competitive advanced manufacturing establishes the basis for innovating next-generation technologies by ensuring critical feedback from the production phase to invention and discovery.

### Initiative Objectives

- Increase U.S. competitiveness in manufacturing clean energy technologies
- Increase U.S. competitiveness across the manufacturing sector by boosting energy productivity and leveraging clean affordable domestic energy resources and feedstocks.

### MEET THE TEAM

The CEMI Team comprises experts from across DOE and collaborates to:

- Formulate and develop a strategy leveraging existing budget authorities to strengthen U.S. clean energy manufacturing competitiveness and advance progress toward the nation's energy goals
- Conduct analysis to evaluate manufacturing challenges and opportunities
- Engage with experts from industry, universities, national laboratories, and the broader innovation and economic communities.

Participating offices include: Energy Efficiency & Renewable Energy, Economic Impact & Diversity, Intelligence and Counterintelligence, National Nuclear Security Administration, Fossil Energy, Nuclear Energy, Office of Science, Loan Programs Office.

## RESOURCES

Offices and programs across DOE are providing more and more targeted resources for manufacturers, including the following:

1. Innovation in advanced manufacturing
  - Developing advanced manufacturing approaches for specific energy technologies
  - Developing advanced manufacturing technologies that can be applied to multiple energy sectors
2. Industry consortia and shared facilities for advanced manufacturing innovation
  - Clean Energy Manufacturing Innovation Institutes
  - Manufacturing Demonstration Facilities
3. Training, technical assistance, and workforce development
  - Technical assistance to help manufacturers save energy and money
  - Workforce development in industrial energy efficiency and in advanced manufacturing technologies for energy
4. Tools to improve the business environment for clean energy manufacturing
  - Advanced Technology Vehicle Manufacturing Loan Program and programs for efficiency in manufacturing
  - State strategies for the clean energy economy

## PARTNERSHIP PRIORITIES

Through CEMI, DOE is committed to partnering with the innovation community to enhance U.S. competitiveness in the clean energy manufacturing industry. CEMI's partnership priorities include the following.

### Advanced Materials Manufacturing Research and Development (AMM R&D).

Advanced materials are integral to clean energy technologies. Through CEMI, several offices across DOE will collaborate to form public-private partnerships in AMM R&D. AMM R&D is a new approach to materials development that uses computational material science to create validated computational models that capture the effects of advanced processing techniques and end-use performance. By supporting AMM R&D efforts, DOE aims to help reduce the cost, time, and risk of commercializing new advanced materials.

### Clean Energy Manufacturing Analysis Center (CEMAC).

CEMAC is a collaboration across DOE national laboratories, and its core team works with industry and academia to deliver credible, timely, reliable analyses of clean energy technologies' supply chains, global trade flows, and factors that drive manufacturing strategy. CEMAC develops innovative models and tools, and publishes high-impact results that support decision-makers' efforts to promote economic growth and the transition to a clean energy economy.

### Technologists in Residence.

DOE national laboratories represent a tremendous innovation resource that can enhance U.S. clean energy manufacturing competitiveness. CEMI's Technologist in Residence pilot is designed catalyze strong national lab-industry relationships that will lead to high-impact collaborative R&D. By developing mechanisms to help interested companies more easily connect and form relationships with DOE's national labs moving forward, Technologist in Residence will enhance the commercial impact of DOE's national labs.



Advanced turbine systems, an advanced manufacturing technology, have the potential to reshape how we make clean energy technologies. *Photo credit: The National Energy Technology Laboratory*

## Events and Input

### American Energy & Manufacturing Competitiveness Partnership

CEMI, in partnership with the Council on Competitiveness, engages leaders from industry, universities, national laboratories, and the broader innovation and economic community to identify ways in which the public and private sectors can partner to enhance U.S. clean energy competitiveness.

#### Events in 2015 include:

- June 23, 2015, Washington, DC: Strategic Partnerships for Scaling Innovation to Manufacturing Dialogue
- June 25, 2015, Chicago, IL: AMM Dialogue 2
- August 17, 2015, College Station, TX: AMM Dialogue 3
- September 15-16, 2015, Washington, DC: CEMI National Summit

## CEMI Regional Summits

CEMI holds regional summits across the country to gather input and share information about DOE's existing resources.

#### Events in 2015 include:

- July 9, 2015, Atlanta, GA: CEMI Southeast Regional Summit