

Advanced Manufacturing Office Peer Review

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AMO Vision and Mission

VISION: U.S. global leadership in sustainable and efficient manufacturing for a growing and competitive economy.

MISSION: Catalyze research, development and adoption of energy-related advanced manufacturing technologies and practices to drive U.S. economic competitiveness and energy productivity.



MULTI-YEAR PROGRAM PLAN:

- Describes the Office mission, vision, and goals
- Identifies the technology, outreach, and crosscutting activities the Office plans to focus on over the next five years.

AMO Success Indicators

- Validate selected advanced manufacturing technologies and deploy practices that increase the rate of **energy intensity** improvement from business as usual (~1 % per year) to 2.5% per year.
- Advance materials and manufacturing technologies with the potential to reduce **lifecycle energy** by 50% by 2025 compared to the 2015 state-of-the-art.
- Develop and validate at least 3 advanced materials and technologies that reduce modeled industrial **energy costs** for the manufacturing sector by 30% or more by 2022 compared to a 2015 baseline.
- Establish partnerships resulting in 30,000 U.S. manufacturing facilities implementing AMO-recognized **energy management** products, practices and measures by 2025.
- Double supported **technical education** and training activities in advanced manufacturing made available for private entities, universities, community colleges, and high schools by 2025.

AMO Multi-Year Program Plan (MYPP) Framework:

Alignment to FY17 Execution



Plans for the RD&D Areas include the following:

- Overview of Technical Area
- Targeted Impacts
- AMO Approach
- Technical Targets with Examples
- Related Resources

Technical Targets for RD&D Areas

| | Target | Fiscal Year | Current AMO Activity* | Current Status (2016) | | Success Indicator** |
|---|--------|-------------|-----------------------|-----------------------|------------------|---------------------|
| | | | | 2015 Baseline | Progress to Date | |
| # | | | | | | |

*Key: CST = Funded Institute or Hub R&D = Funded R&D Project SBIR = Funded SBIR Project
PRA = Practices NCA = No Current Activity

**Key: EI = Energy Intensity LC = Life Cycle Energy EC = Energy Cost
EM = Energy Management Practices TE = Technical Education and Training

Topic Criteria

- Impact (high priority problem in a broad technology area)
- Additionality (will federal funds make a difference?)
- Openness (open to new ideas, approached and performers)
- Enduring economic impact
- Proper role of government vs private investment

AMO Execution Strategy

- Strategic Analysis
- Workshops
- Requests for Information
- Notice of Intent
- Funding Opportunity Announcements/Lab Calls

AMO: Three complementary strategies

R&D Projects: Bridging the innovation gap

Research and Development Projects to support innovative manufacturing processes and next-generation materials

R&D Consortia: Public-Private consortia model

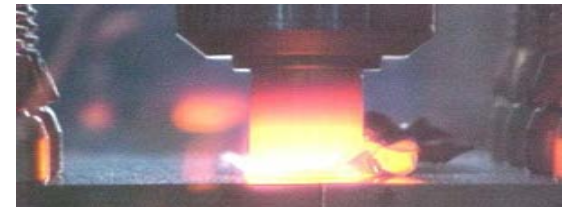
R&D Consortia offer affordable access to physical and virtual tools, and expertise, to foster innovation and adoption of promising technologies

Technical Assistance: Direct engagement with Industry

Driving a culture of continuous improvement and wide scale adoption of proven technologies, such as CHP, to reduce energy use in the manufacturing sector

Emerging Research Exploration (ERE) Projects

- FOA released mid-2017
- Broad topical areas spanning advanced materials, processes, and modeling/analysis tools
- Focus on filling portfolio gaps that would be “on ramped” into future Multi-Year Program Plans
- 24 projects announced Feb 2018 with up to \$35 million in total funding
 - 16 projects in materials
 - 7 projects in processes
 - 1 projects in modeling
- Project partners include industry, university, and national lab recipients



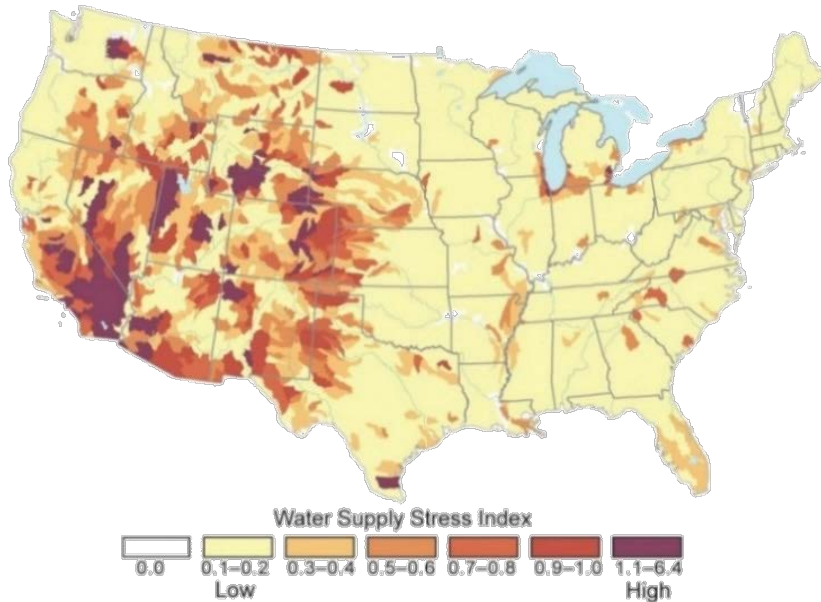
AMO Lab Call – FY18

- Lab call released in May 8
- Topical areas align with Multi-Year Program Plan:
 - Materials for Harsh Service Conditions
 - Advanced Materials Manufacturing
 - Roll-to-Roll Processing
 - Process Intensification
 - Waste Heat Recovery Systems
 - Combined Heat and Power Systems
 - Wide Bandgap Semiconductors for Power Electronics
 - Additive Manufacturing
- Approximately \$45 million federal funding
- Proposals submitted June 21 and under review
- Selections to be announced in August



Desalination Hub to be announced

Water Stress in the U.S.

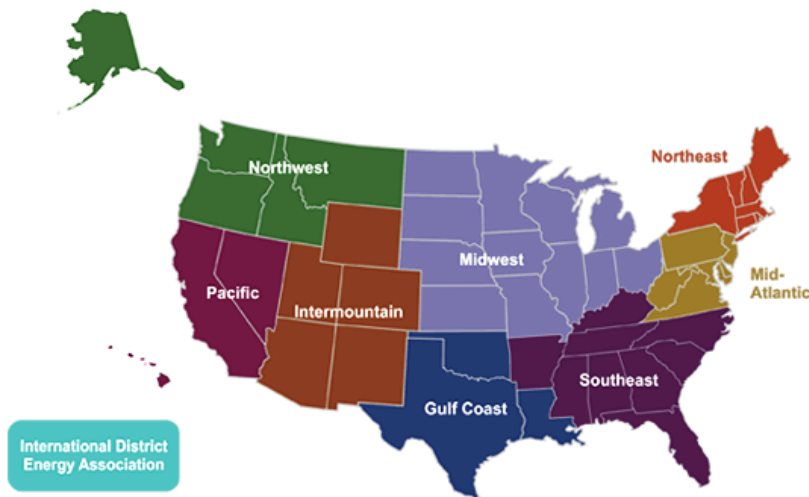
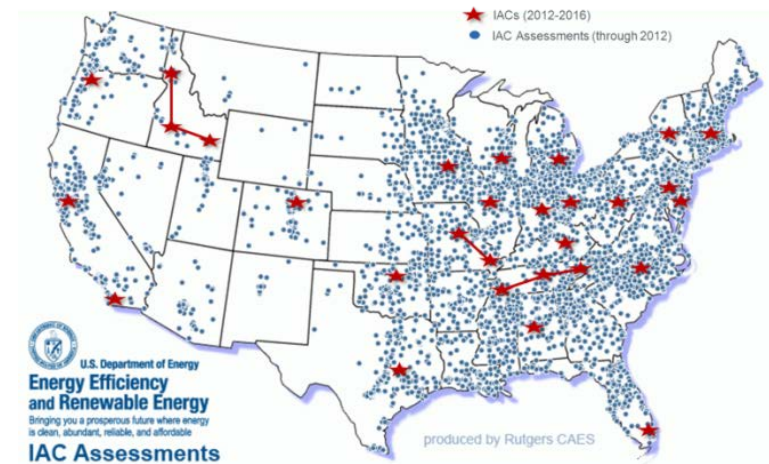


<https://nca2014.globalchange.gov/highlights/report-findings/water-supply/graphics/water-stress-u-s>

- A new Energy Innovation Hub, AMO's second Hub along with the Critical Materials Institute
- Will provide a coordinate, large-scale effort to achieve pipe-parity water production by solving critical desalination technology challenges
- Industry, national labs, universities partner together
- **Notice of intent announced on June 22nd**

Technical Assistance

- Industrial Assessment Centers renewed for 5-year term
- Expanded to include waste water treatment and basic cyber hygiene
- Student-led teams at 28 universities around the country



- CHP Technical Assistance Partnerships renewed for 5-year term
- Provide end-user and stakeholder engagement, as well as technical services around combined heat and power.



Thank You

For additional information:

energy.gov/eere/amo/advanced-manufacturing-office

