

U.S. DEPARTMENT OF
ENERGY

Office of
**ENERGY EFFICIENCY &
RENEWABLE ENERGY**

Advanced Manufacturing Office

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manufacturing.energy.gov

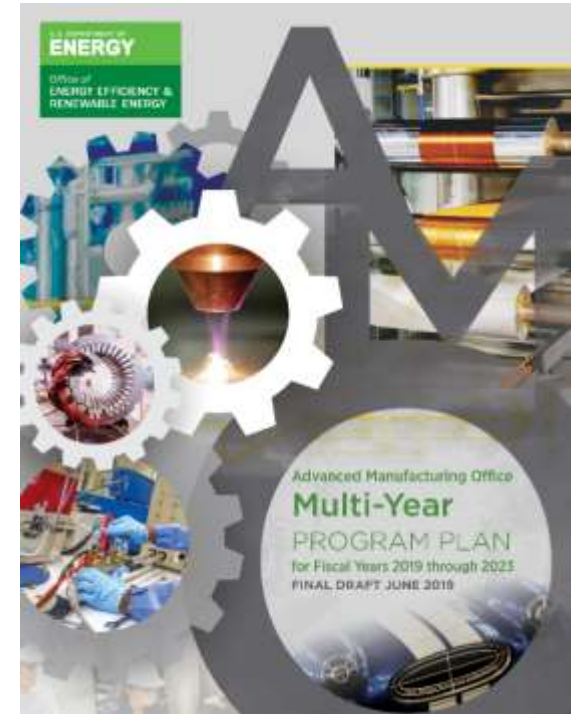
NASEO Energy Policy Outlook Conference and Energy Innovation Summit
February 7, 2020



U.S. DOE Advanced Manufacturing Office

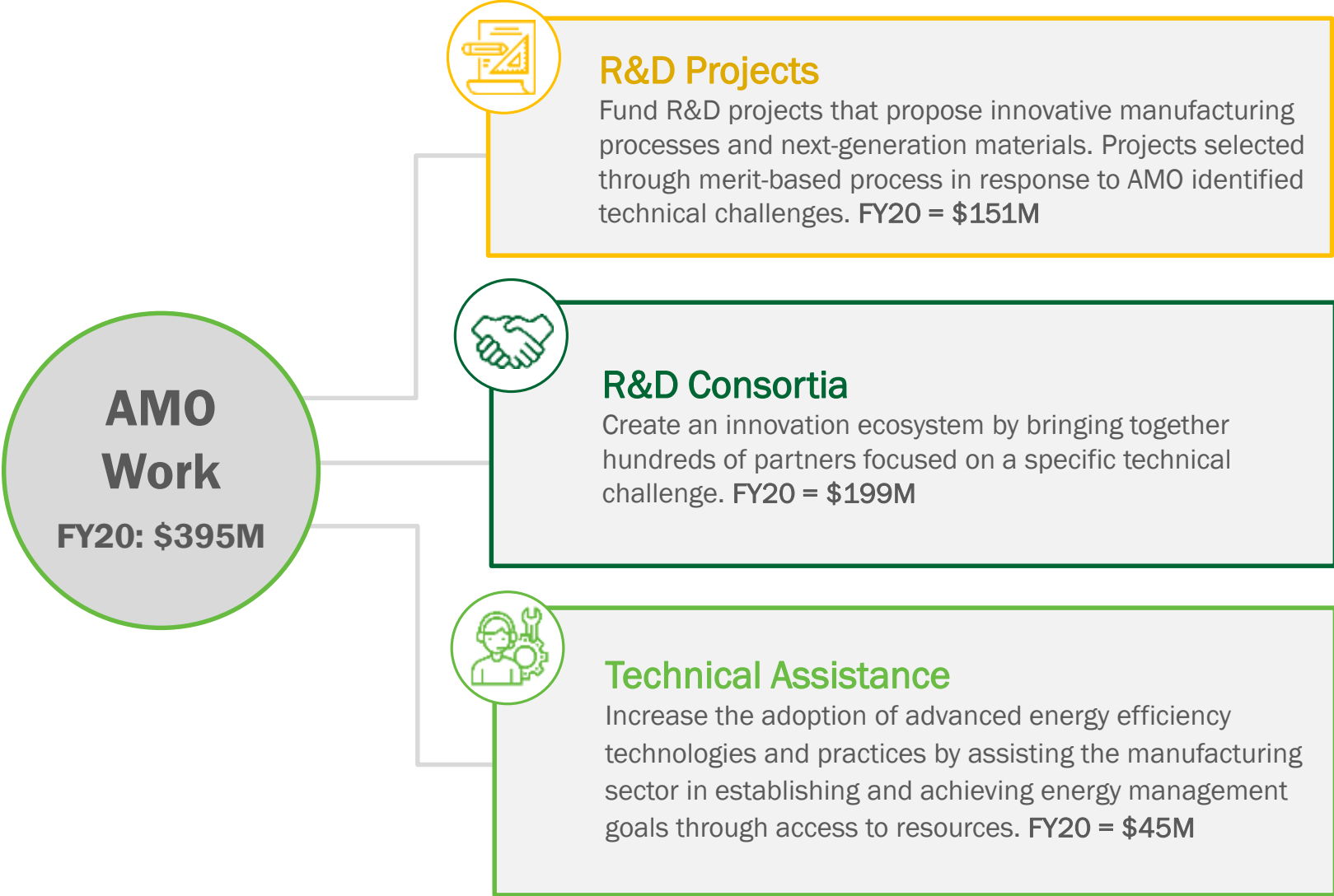
VISION: U.S. global leadership in sustainable and efficient manufacturing for a growing and competitive economy.

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



Approach: Partner with industry, academia, states, and National Laboratories to catalyze R&D and the adoption of advanced manufacturing technologies.

AMO Approach



AMO Success Indicators

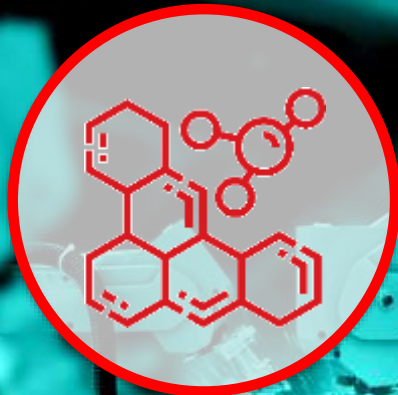
- Reduce **energy intensity by 20%** in validated advanced materials, processes, and technologies
- Achieve **50% lifecycle energy reductions** for manufactured goods
- **Improve affordability and domestic availability** of key materials and resources
- Attain **10,000 U.S. manufacturing facilities** implementing AMO-recognized energy management products, practices, and measures by establishing partnerships
- **Double technical education and training activities** available for private entities, universities, community colleges, and high schools

Targets when compared to 2015 baseline

EERE Priority Areas



STORAGE



**CRITICAL
MATERIALS**



PLASTICS



CYBER



WATER

AMO's Role in EERE Priority Areas

Energy Storage: U.S. manufacturing and supply chain leadership for next-generation energy storage technologies

- **Technology Focus Areas**
 - Develop innovative solutions and accelerate scale-up of emerging manufacturing processes to strengthen U.S. manufacturing of storage technology and components
 - Improve material supply chain resilience and recyclability to reduce dependence on foreign sources
- **Energy Storage Grand Challenge launched in January 2020**

Critical Materials: Enhance critical material resiliency for energy technologies

- **Technology Focus Areas**
 - Diversify the supply chain for materials at risk of disruption
 - Conduct R&D around material substitutes
 - Develop recycling and reuse technologies
- **Supports Energy Storage Grand Challenge and Water Security Grand Challenge**
- **Critical Materials Institute (CMI) launched in 2013**

DOE Grand Challenges: Framework to focus DOE resources; Coordinated suite of prizes, competitions, & R&D

AMO's Role in EERE Priority Areas (continued)

Plastics Innovation: U.S. global leadership in advanced plastics recycling and new plastics manufacturing

- **Technology Focus Areas**
 - Develop upcycling technologies to break down existing plastics into their chemical building blocks for use in higher-value products
 - Develop future plastics that are recyclable- and biodegradable-by-design
- **Plastics Innovation Challenge announced in November 2019**
- **Jointly funded Bio-Optimized Technologies to Keep Thermoplastics out of Landfills and the Environment (BOTTLE) – FOA coming soon**

Cybersecurity: Cybersecurity R&D for technologies that enable energy-efficient manufacturing

- **Technology Focus Areas**
 - Address cyber vulnerabilities in automated processes
 - Improve security of supply chain network
- **Funding Opportunity for a Clean Energy Manufacturing Innovation Institute announced in March 2019 – selection announcement coming soon**

AMO's Role in EERE Priority Areas (continued)

Water Security: Advance transformational technology and innovation through U.S. manufacturing leadership to meet the global need for safe, secure, and affordable water

- **Technology Focus Areas**
 - Improve resource recovery, including energy, nutrients and critical materials, from water and wastewater facilities
 - Develop cost-competitive, energy-efficient, water-efficient technologies for use in manufacturing, electricity generation, oil and gas production, mining, agriculture, and by municipalities
 - Develop energy efficient technologies to deliver clean water from non-traditional water sources at pipe parity
- **Water Security Grand Challenge launched November 2018**
- **National Alliance for Water Innovation Hub announced September 2019**

On the Horizon for 2020

Pending Announcements

- FY19 Multi-topic FOA selections
- Cybersecurity Institute selection

Open Funding Opportunities

- \$3.25M Geothermal Prize
- \$1M Water Resource Recovery Prize
- AMO Supported Funding for Sustainable Transportation
 - \$15M for Polymer Composites for Vehicle Applications (Vehicle Technology Office Multi-topic FOA)
 - \$15M for Electrolyzer Manufacturing R&D and \$15M for Advanced Carbon Fiber for Compressed Gas Storage Tanks (H2@Scale New Markets FOA)

Opportunities to Provide Input and Learn more

- Spring: Series of Stakeholder Workshops on Specific Topics
- June 2-4: AMO Peer Review

Watch for Upcoming Announcements

- FY20 Multi-topic FOA
- Topic-specific opportunities
- BOTTLE FOA to support Plastics Innovation Challenge



Thank You

For additional information
and to subscribe for updates:

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

