Advanced Manufacturing Office
(Formerly Industrial Technologies Program)

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Brief to:

Hydrogen and Fuel Cell Technologies Manufacturing R&D Workshop

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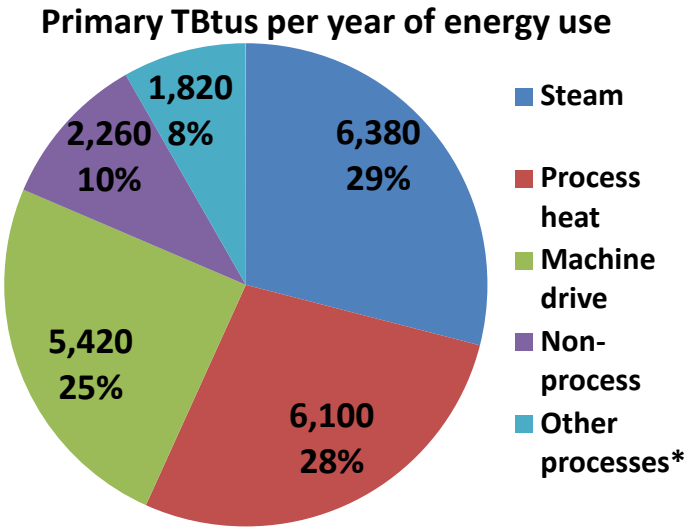
Background and Opportunity

Background

Industry accounts for 30% of energy consumption in the United States.

Energy use in manufacturing facilities is dominated by (thermal) processing.

President Obama launched the Advanced Manufacturing Partnership to develop transformational manufacturing technologies and innovative materials that could enable manufacturing facilities to dramatically increase their energy efficiency (Pittsburgh, PA; June 24, 2011). DOE was named as one of the key Departments to execute the President's vision.



Source: Manufacturing Energy and Carbon Footprint, derived from 2006 MECS

EERE Advanced Manufacturing Office Mission

Develop and demonstrate at a "convincing scale" new energy-efficient processes and materials technologies (e.g., low-temperature membranes, aqueous-based processes).

Develop broadly applicable, manufacturing processes that reduce energy intensity and efficiently direct energy to forming the product. Examples include additive manufacturing, selective heating, and out-of-the-autoclave composite manufacturing.

Develop and demonstrate pervasive materials technologies that reduce life-cycle energy requirements for production of low-cost, high-performance products for high-value industries such as the renewable energy industry. Example materials include low-cost carbon fiber, low-cost titanium, resilient coatings, and lightweight magnet materials.

Capture US manufacturing industry competitive advantage by Technology Deployment to industry that promotes: new flexible/adaptable processes and materials; real time process control; energy efficiency; workforce training; and, distributed manufacturing through a fast communications infrastructure

Management Structure and Project Execution

The Advanced Manufacturing Office will invest in cross-cutting manufacturing engineering and development activities.

- Invest in projects with broad applicability that will provide a competitive advantage to U.S. manufacturers.
  - Finite length (2-3) year projects
  - Rotating Project Officers (from EERE Programs, other Offices in DOE, DOD, DOC, Industry, Academia, etc.)
  - Governed by specific goals and metrics (performance, cost, schedule)

- Co-invest (with other DOE/DOD/USG Programs and industry) to bridge the "Valley of Death" for new technologies and material systems. Investments will span TRLs 2-7 in order to demonstrate prototypes at a scale meaningful to manufacturers.