Clean Energy Manufacturing Initiative

Transforming U.S. Clean Energy Manufacturing Competitiveness

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December 17, 2014

DOE

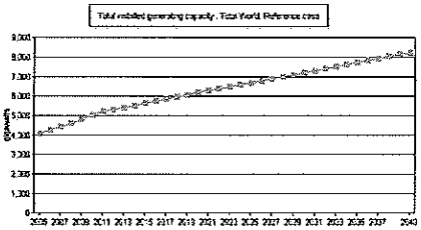
The Significance of Clean Energy Manufacturing

Advanced Manufacturing Enhancement of Energy Technologies

Advanced Manufacturing Technologies like additive manufacturing are enabling new components for higher performance in technologies like jet engines

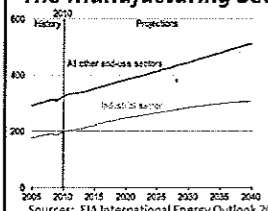
Source: GE Capital

Global Energy Market Opportunity



Source: eia U.S. Energy Information Administration

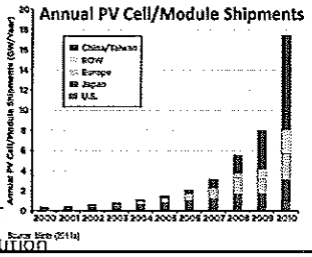
The Manufacturing Sector & Energy



38% of global delivered energy consumption

$11B annual savings in manufacturing due to low-cost natural gas

Race to Capture the Market



Sources: EIA International Energy Outlook 2013, Bureau of Economic Analysis, Census Bureau, PWC http://www.pwc.com/us/en/industrial-products/publications/s

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DOE Clean Energy Manufacturing

Vision

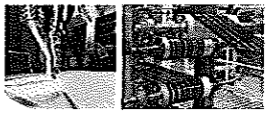
For the U.S. to be the world leader in translating cutting edge science, technology innovation, and market solutions in energy technologies and energy efficiency into high-impact manufacturing, enabling substantial economic growth, energy security, and accelerated innovation.

Objectives

- Enhance U.S. competitiveness in manufacturing clean energy technologies
- Enhance U.S. competitiveness in manufacturing across the board by implementing energy productivity measures and leveraging low-cost domestic fuels and feedstocks

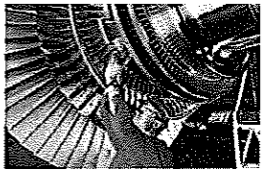
Manufacturing Competitiveness

The extent to which a country is selected as the location for manufacturing, while supporting rising wages and standards of living.

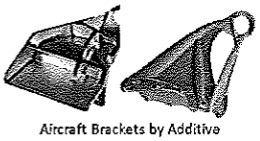


Additive Manufacturing | Carbon Fiber Production

Wind Turbine Blade Manufacturing



Gas Turbine Manufacturing



Aircraft Brackets by Additive Manufacturing

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DOE Definitions

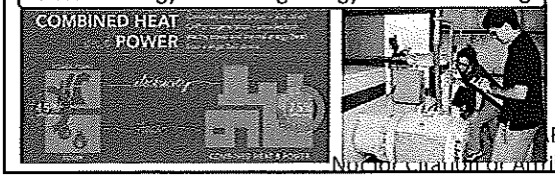
Clean Energy Manufacturing:
Making things such that lifecycle sustainability is improved in the making, use, and full lifecycle of the product made.

Advanced Manufacturing:
Making things in a manner such that technology provides a competitive advantage over practices widely in use

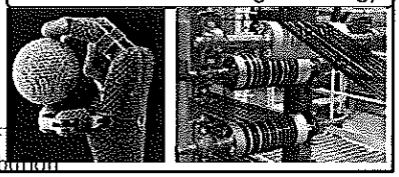
Manufacturing Products that Generate Clean Energy

...& Products that Save Energy

Cleaner Energy and Saving Energy in Manufacturing



Advanced Manufacturing Technology



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Efforts to date

- Clean Energy Manufacturing Innovation Institutes in the National Network for Manufacturing Innovation
- >$500M in Manufacturing R&D across offices
- Technical Assistance for Manufacturers
- $150M advanced energy manufacturing tax credits
- Clean Energy Manufacturing entrepreneurship incubator pilot
- Multi-sector global manufacturing costs analysis
- DOE-wide strategy for Clean Energy Manufacturing

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A look ahead

- Ongoing: Global Clean Energy Manufacturing Analysis. Next Topic: Fuel Cells
- This Winter: Solar manufacturing R&D opportunity
- This Spring: Next Clean Energy Manufacturing Innovation Institute
- This Spring: Technologists in Residence Pilot
- This Spring: Materials Manufacturing Acceleration design dialogues

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