



30 Years of Energizing Efficiency

# What's Next for Corporate Energy Efficiency

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# The American Council for an Energy-Efficient Economy (ACEEE)

30 year old, non-profit 501(c)(3) dedicated to advancing energy efficiency through research and dissemination.

35+ staff in Washington DC, + field offices in DE, MI, WA and WI.

Focus on End-Use Efficiency in Industry, Buildings, Utilities, and Transportation; Economic Analysis & Human Behavior; and State & National Policy

Funding:

- Foundations (34%)
- Federal & State Grants (7%)
- Specific Contract work (21%)
- Conferences and Publications (34%)
- Contributions and Other (4%)

# Trends in Manufacturing:

- Manufacturing important to U.S. & Canadian economies
- Future demand for manufacturing will be increasingly domestically driven
- Entering a period of new capacity investment—though slowed by economic downturn
- Increased focus on “value chain” issues—most energy/carbon input by suppliers
- Intelligence in the manufacturing and in the value chain—*Smart Manufacturing*

# Role of Manufacturing in the Economy

- Manufacturing **still** accounts for:
  - More than 1/4 of economic output
  - More than 1/4 of energy and carbon
- Employment down due to labor **efficiency**—**future** productivity opportunities in *resource efficiency* (including energy)
- Solving our economic & climate issues must involve the manufacturing sector
- Manufacturing enables energy efficiency in the economy

# The Flat World May Be Curving Back with regards to Manufacturing

- Economic data beginning to suggest return to domestic production of manufactured goods
- Driven by:
  - Energy & time costs of marine freight
  - Inventory cost of freight & desire to shorten supply chains
  - Need more nimble supply chains
  - Growing consumer demand in emerging markets
- Trend will require change in manufacturing strategies and management plans

# Need for New Capacity

- Last period of capacity additions ended over 30 years ago
- Living off past investments— aging infrastructure—needs to be replaced to remain globally competitive
- New capacity will be resource efficient
- Need new technologies to drive efficiency— redefine industries
- Need policies to promote capital & R&D investments

# Focus on the *Value Chain*

- 85+% energy, value-added & carbon added in the value or supply chain—not final manufacturer
- Large & SME critical elements of value chain
- Need to coordinate up & down the value chain—planning & management across companies
- Small changes in productivity at end of value chain can result in large energy & carbon savings

# ***Smartening* the Value Chain**

- Automation—sensors & controls led to labor productivity improvements
- Net step is to bring IT enabled networks & intelligence to manufacturing—Smart Manufacturing
- Smartening allows optimization—maximizes resource efficiency
- Smartening the Value Chain:

Equipment → Process → Plant → Value Chain

# Conclusions

- Manufacturing key to clean & healthy economy
- Keep focus on domestic value chains—meeting product needs & enabling efficiency
- Need policy focus on R&D & capacity investments
- Focus on the value chain—efficiency through optimization
- Smart Manufacturing will define the next generation of capacity

# Thank You

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