

# **Industrial Energy Efficiency: *Time for a Total Energy Systems Approach?***



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Alliance to Save Energy**

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*Creating an Energy-Efficient World*

# Presentation Overview

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- What's happening in Industrial Energy Efficiency
- What's **not** happening in Industrial Energy Efficiency
- A possible activity
- Group discussion

# What is the Alliance?



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- NGO coalition of prominent business, government, environmental and consumer leaders who promote the efficient and clean use of energy worldwide to benefit the environment, economy, and national security.
- Mission: To advance energy efficiency world-wide through policy, education, research, technology deployment, market transformation and communication initiatives.
- Chaired by Senator Mark Pryor (D-AR) and James DeGraffenreidt (CEO Washington Gas) with strong bi-partisan congressional, corporate & public interest leadership

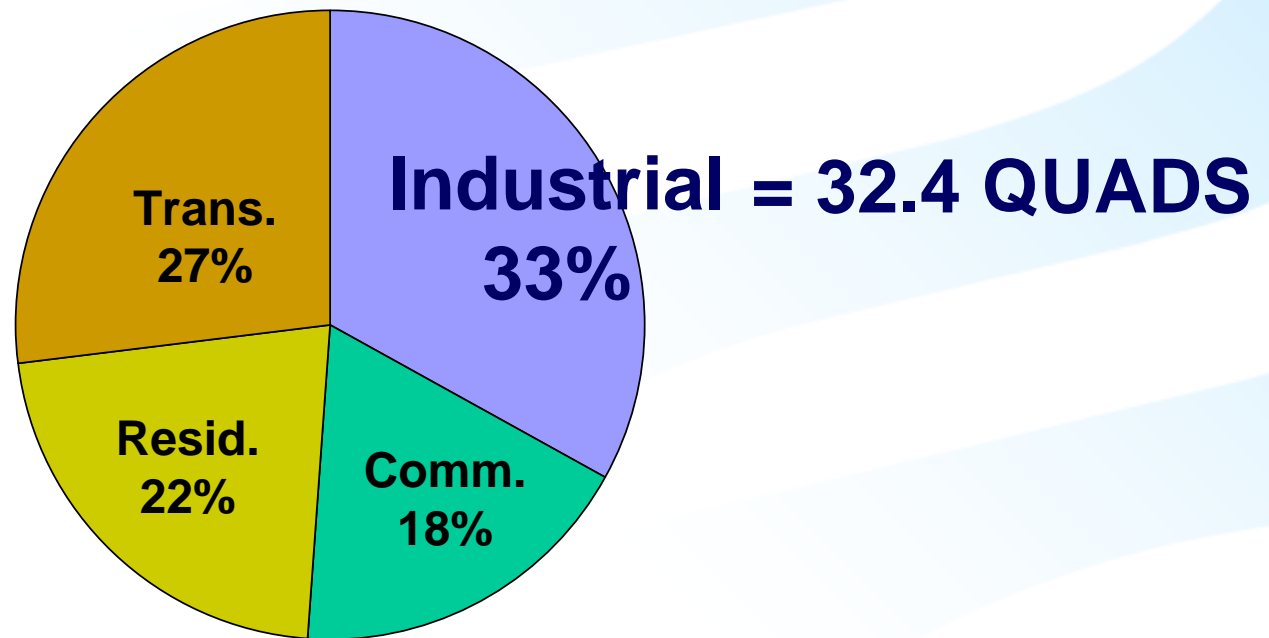


# Industrial Energy Use



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## U.S. Energy Consumption by Sector\*, 2003



**Total Energy (2003) = 98.2 Quadrillion Btu**

*\*These quantities include allocations for utility power generation*

SOURCE: U.S. (DOE-EIA, 2004)

# Potential: **\$37.4 Billion**



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- \$37.4B = Potential annual savings to U.S. process industries through reduced energy waste.
- A typical industrial facility can cut energy use by 15% or more with low-cost, rapid-payback projects.
- In specific energy systems (e.g., steam, process heating, compressed air, and pumps), savings may exceed 30%.
- These savings can dramatically reduce a company's energy bills, directly increasing profits.

# Promoting Industrial EE at the National Level

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- Much good work has been done
  - DOE Industrial Technologies Program
    - BestPractices Program
    - Industrial Assessment Centers
    - Save Energy Now initiative
  - EPA Energy Star for Industry Program
    - “Guidelines for Energy Management”
    - Energy Star Partnerships
  - Nonprofits such as ACEEE, ASE
  - National Laboratories

# Promoting Industrial EE at the Regional & State Level

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- Much good work has been done
  - NW Alliance
    - Industrial Energy Alliance
  - Wisconsin Focus on Energy
    - Practical Energy Management
    - Industrial Cluster Initiative
  - Utility programs, esp. in CA and NE
  - Recent NYSERDA industrial sector solicitation
  - ...and others

# Industrial EE Initiatives

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- System-specific initiatives are creating excellent practical & impartial resources & training
  - Steam BestPractices
  - Compressed Air Challenge
  - Motor Decisions Matter
  - Pump Systems Matter
- Improvements in coordination & cross-promotion likely to be well received by end-users

# Pump Systems Matter

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- Led by the Hydraulic Institute, which created a separate pump systems energy savings and market transformation effort
- Engaging utilities, NGOs, energy efficiency organizations, engineering consultants, etc.
- [www.PumpSystemsMatter.org](http://www.PumpSystemsMatter.org)
- Strategically seeks collaboration with other energy entities: An organizing principle and objective

# The Good News Is...

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There are corporations taking energy efficiency seriously

- Corporate Energy Commitment
  - 3M
  - Dow Chemical
  - DuPont
  - PepsiCo (Frito Lay)
  - others
- Organizing industry-led initiative (PSM)
  - ITT Fluid Technology
  - Flowserve Corporation

# More Good News

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Planned activities seem headed in the right direction

- DOE/EPA

- Planned Plant Certification Program

- National Association of Manufacturers

- Planning New Energy Efficiency Initiative
- Engaging the Manufacturing Sector
- Coordination Opportunities with Other Like-Minded Organizations
- Currently in Formative Stages, but Powerful Leverage Opportunities with Trade Associations, State Entities and Direct Memberships

# HOWEVER....

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- Energy Efficiency is still not a corporate priority nor a standard business practice at most industrial organizations
- Individual e-e projects often too small to pursue
- Many viable projects don't meet corporate "hurdle rates"

# Other Industrial E-E Issues

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## **Still a lot of this mindset:**

- Public affairs “fluff”
- Distraction from core business
- “We’re already as efficient as we can be”
- High-risk, high capital cost “projects”
- “Lower fuel price is the only solution”

## **And not enough this:**

- Energy management as a business process
- Buffer against fuel price spikes and shortages
- Offset today’s operating risks
- Integral to plant reliability
- Offset tomorrow’s environmental compliance risks
- Integral to the process of good corporate governance
- Opportunity to produce more and new products

# What Else Should Be Done?

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- Will these existing initiatives be enough, when combined with existing resources?
- How can each of the existing systems focused initiatives be more successful:
  - Educational courses, defined by customers
  - Tools, driven by industry, to support program
  - Assessments, using industry resources
  - Developing more case studies
- Who will deliver the message?
- Leverage?

# An Idea

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## The Total Industrial Energy Systems Approach

- Build on existing industrial initiatives
- Aggregate the industry-led aspects of these systems-level initiatives
- Produce a consistent “total systems” message that can be used by participants in these initiatives
- Draw in other important industry groups, such as NAM, MEPs, AMMEX

# Total Industrial Energy Systems

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- Emphasize energy management at corporate level
- Encourage facilities to bundle energy efficiency projects – cross-market existing systems programs
- Encourage continuous efficiency gains
- Promote LCC, TCO, non-energy benefits
- Produce, provide new resources
  - Management-focused
    - financial tools, etc.
  - Facility Engineer-focused
    - Guide specs
    - Best Management Practices

# Total Industrial Energy Systems

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- Such an approach could include
  - Steam generation and distribution
  - Pumping Systems
  - Fan Systems
  - Compressed Air Systems
  - Process Heating
  - Industrial cooling
  - Combined Heat and Power
  - Maybe even
    - Insulation
    - Lighting

# Getting Traction

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- Need high-level, highly-public action by high-profile industrial corporations
- Similar to:
  - Chicago Climate Exchange
  - U.S. Climate Action Partnership

# Possible Collaborators

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- Previously mentioned initiatives
- Industrial trade associations
- ASERTTI members
- DOE Industrial Assessment Centers
- NAM
- MEPs
- AMMEX
- Utilities
- ESCOs



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It's Question & Answer time

# Initial Questions

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- Are any state or regional organizations already taking a similar approach?
- What type of outreach will provide the most bang for the buck?
- How can we help increase the market success of existing programs: cooperation vs. competition?
- What can we do together to support the funding needs of existing programs?



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