



U.S. Department of Energy  
Energy Efficiency and Renewable Energy

# Industrial Technologies Program (ITP) “Save Energy Now” Initiative IAC Student Meeting

February 9, 2006

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**U.S. Department of Energy**  
**Industrial Technologies Program (ITP)**



# Saving Energy in Industry is Critical

“America’s businesses, factories, and manufacturing facilities use massive amounts of energy. To help them during this period of tightening supply and rising costs, our Department is sending teams of qualified efficiency experts to 200 of the nation’s most energy-intensive factories. Our Energy Saving Teams will work with on-site managers on ways to conserve energy and use it more efficiently.”



**Secretary of Energy Bodman  
National Press Club  
October 3, 2005**



## NYMEX Henry-Hub Natural Gas - 12 previous months

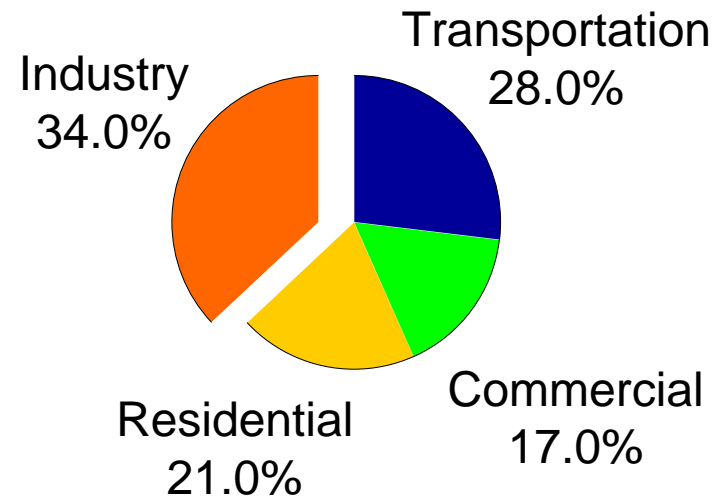




# Industry: Critical to National Energy Policy

- 1/3 of U.S. **energy consumption**
- Accounts for more than 40% of U.S. **natural gas** demand
- 28% of U.S. electricity demand
- Approximately 30% of U.S **greenhouse gas** emissions
- Energy is key to **economic growth** in domestic manufacturing

## 2004 Energy Use\*

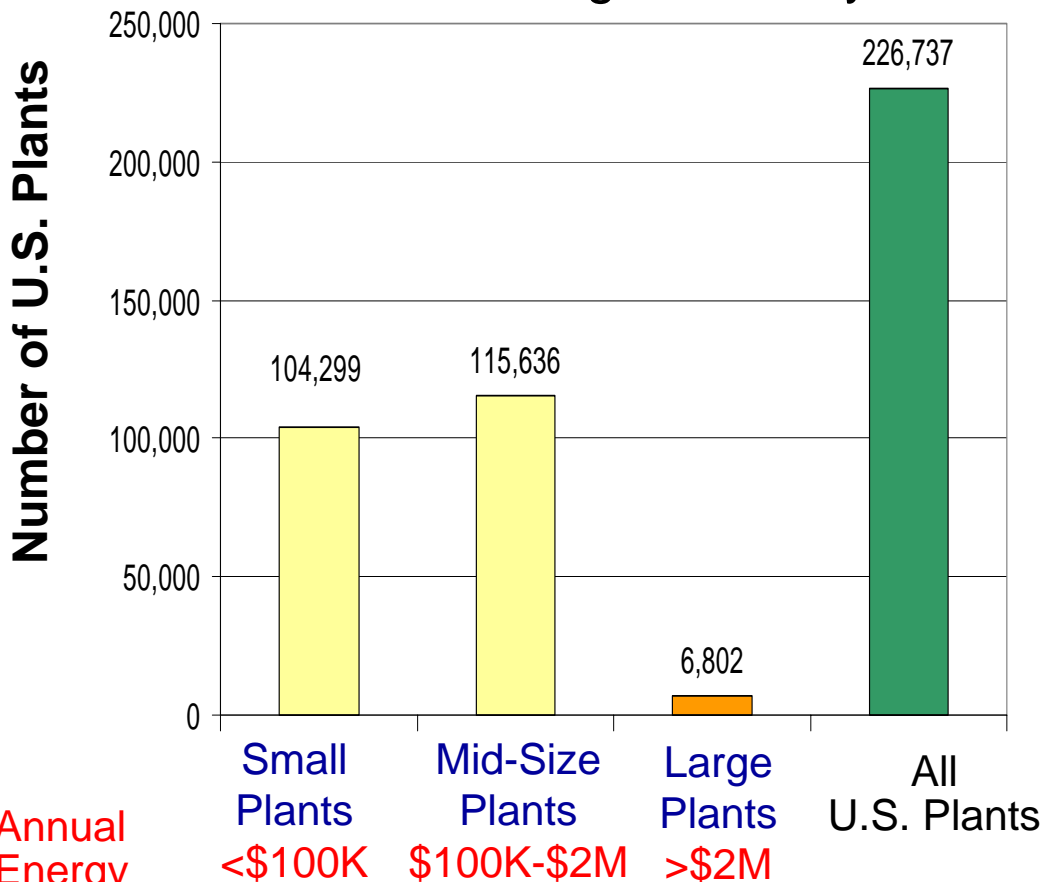


\*Includes electricity losses



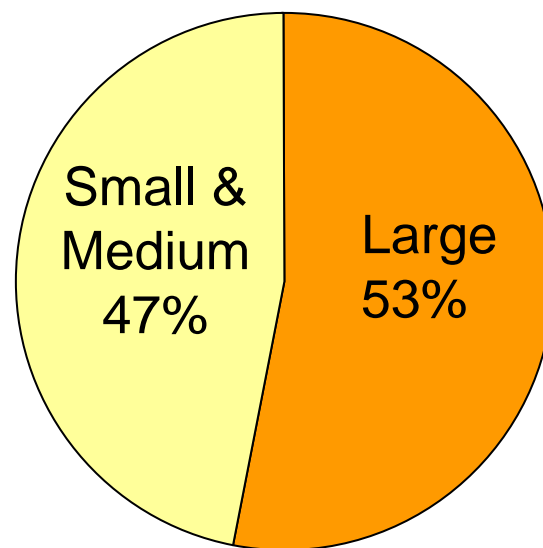
# Relatively Few Plants Use the Most Energy

### U.S. Manufacturing Plants: By Size



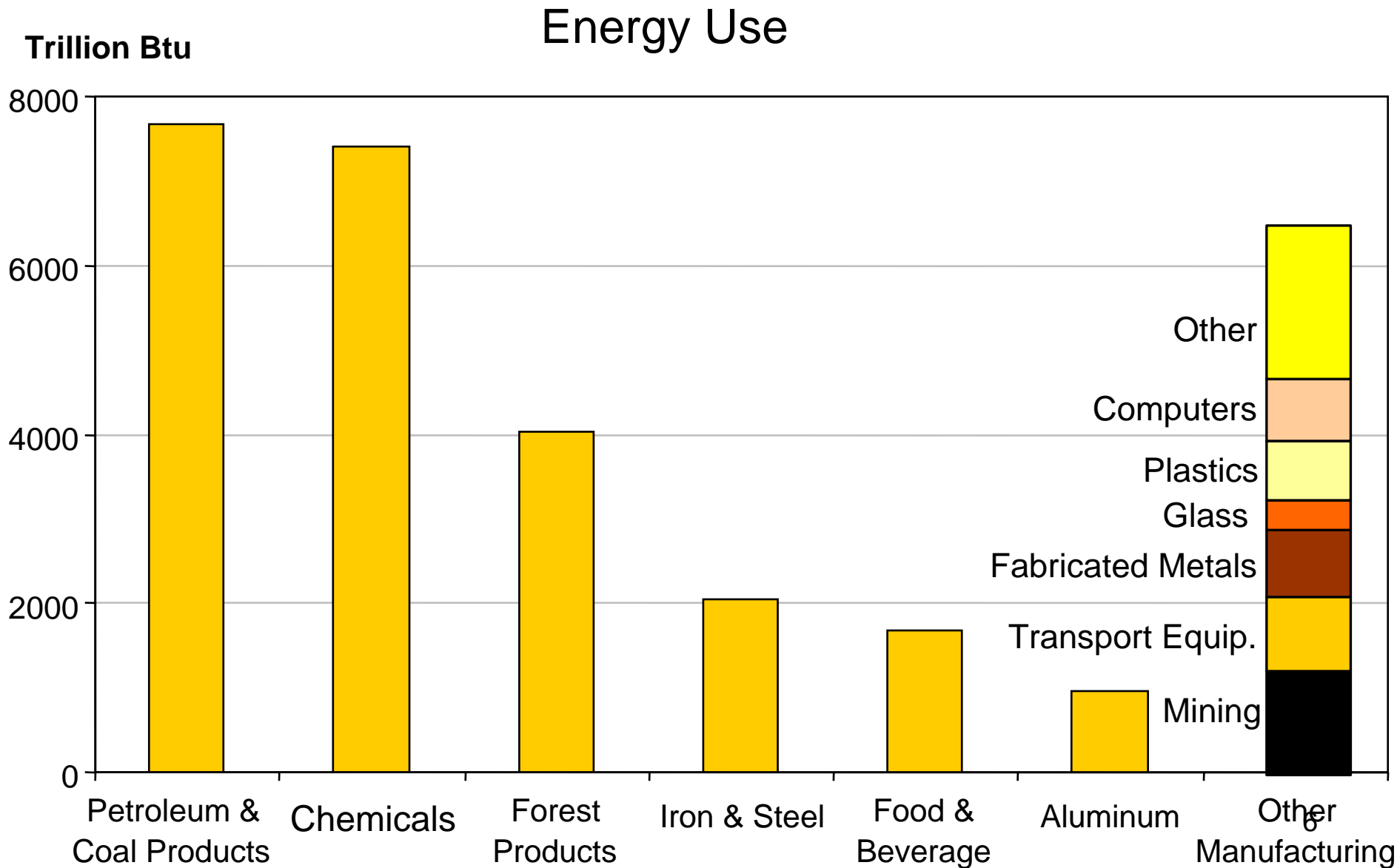
Annual  
Energy  
Costs

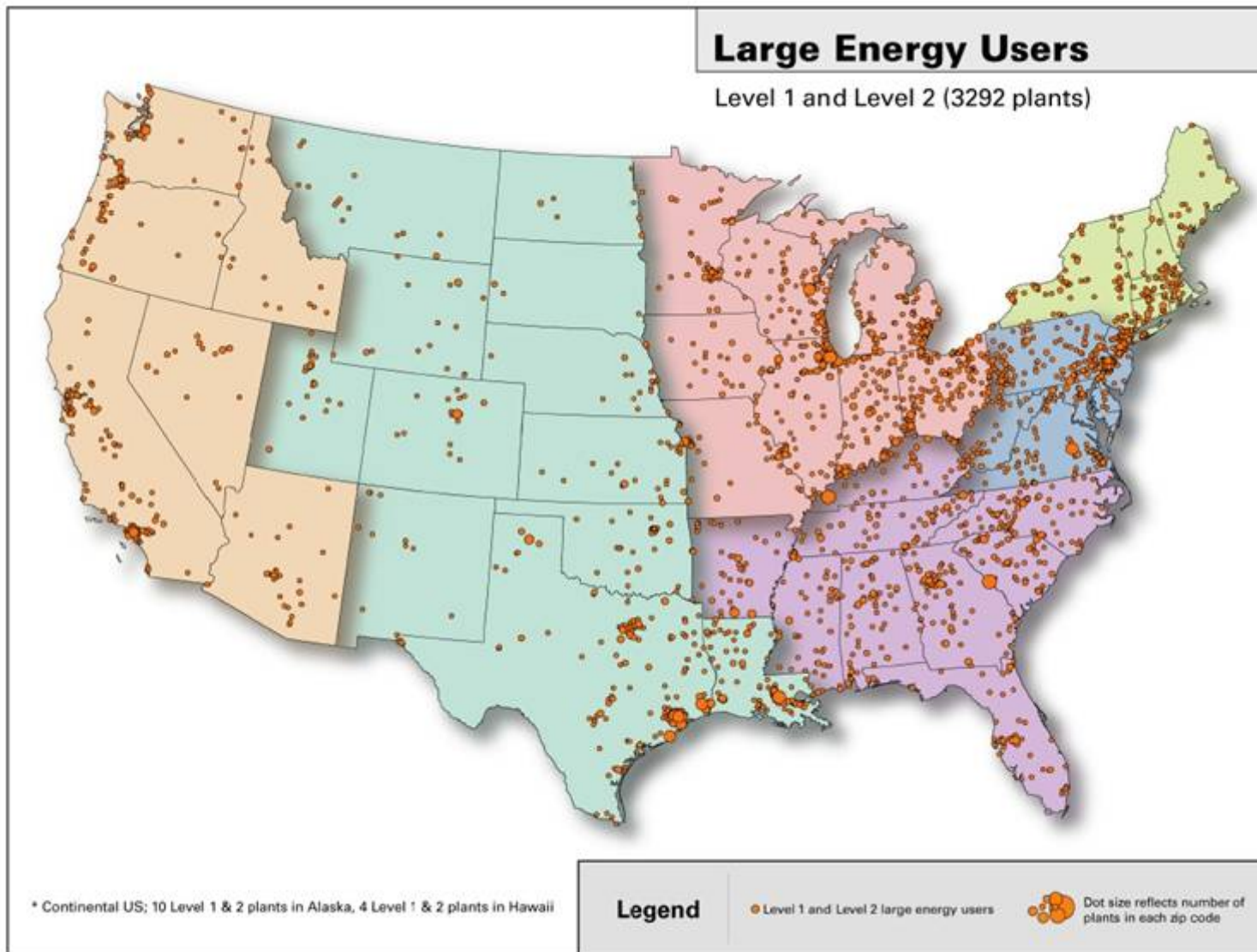
### Percent of Total Industrial Energy





# Segments with Highest Energy Use







## Overview

- Save Energy Now (SEN) Initiative: Part of Secretary Bodman's "Easy Ways to Save Energy Campaign" created in response to anticipated winter 2006 energy price increases
- Solicit large energy-consuming plants & conduct 200 energy assessments over the next 12 months to save up to 10% of energy
- Expand partnerships with industry, states, and end users to reach 50,000 plants with energy efficiency information & tools
- Support the initiative using experts and assessment teams from Industrial Technologies Program's (ITP) BestPractices and Industrial Assessment Centers



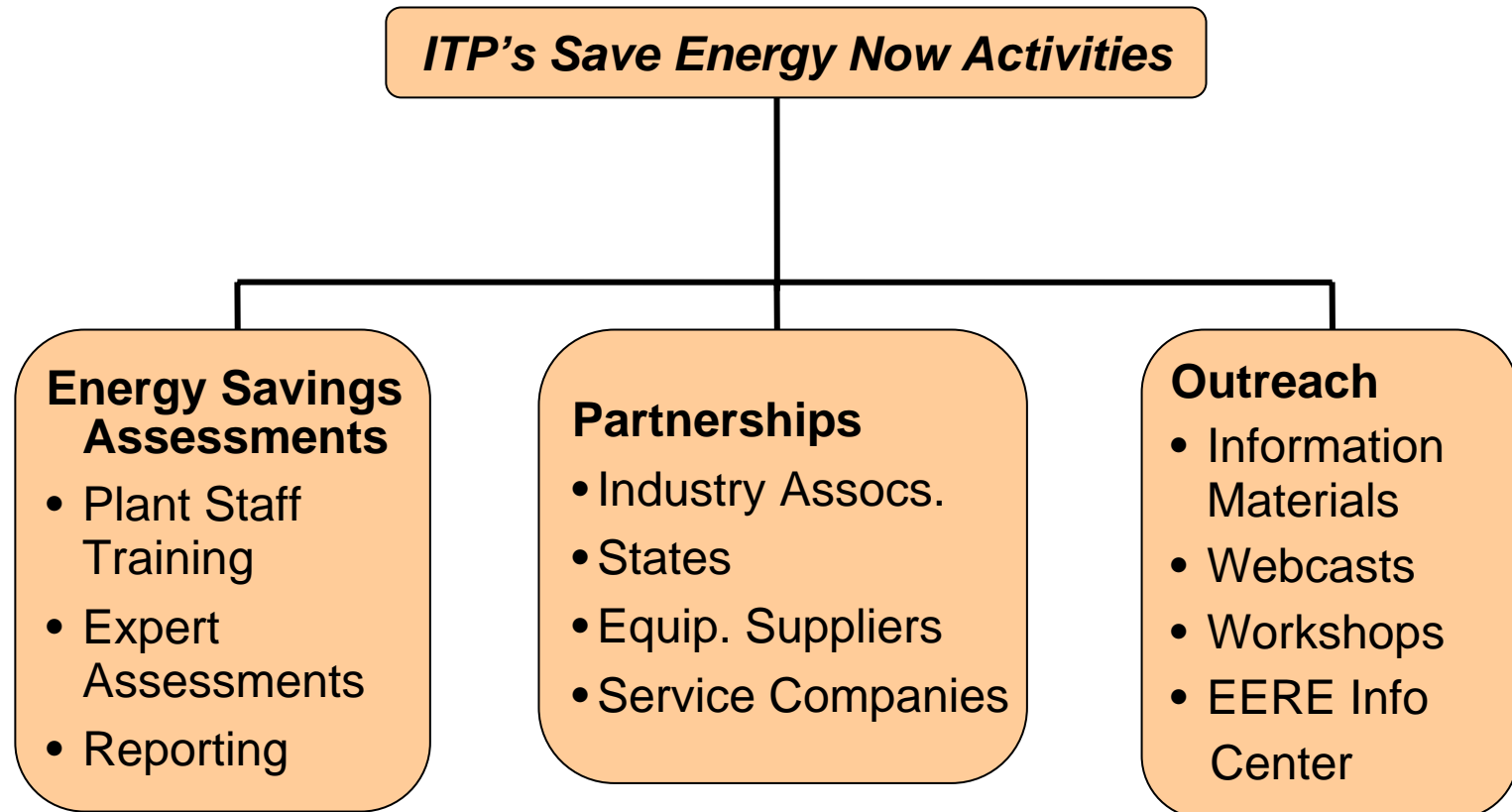
# “Save Energy Now” Initiative

## Goals:

- Encourage industry to voluntarily reduce its energy usage in a period of tight supplies by working with America’s largest energy-intensive plants
- Create momentum to significantly improve energy efficiency practices throughout the manufacturing sector



# Organization of the Save Energy Now Initiative





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# Energy Savings Assessments



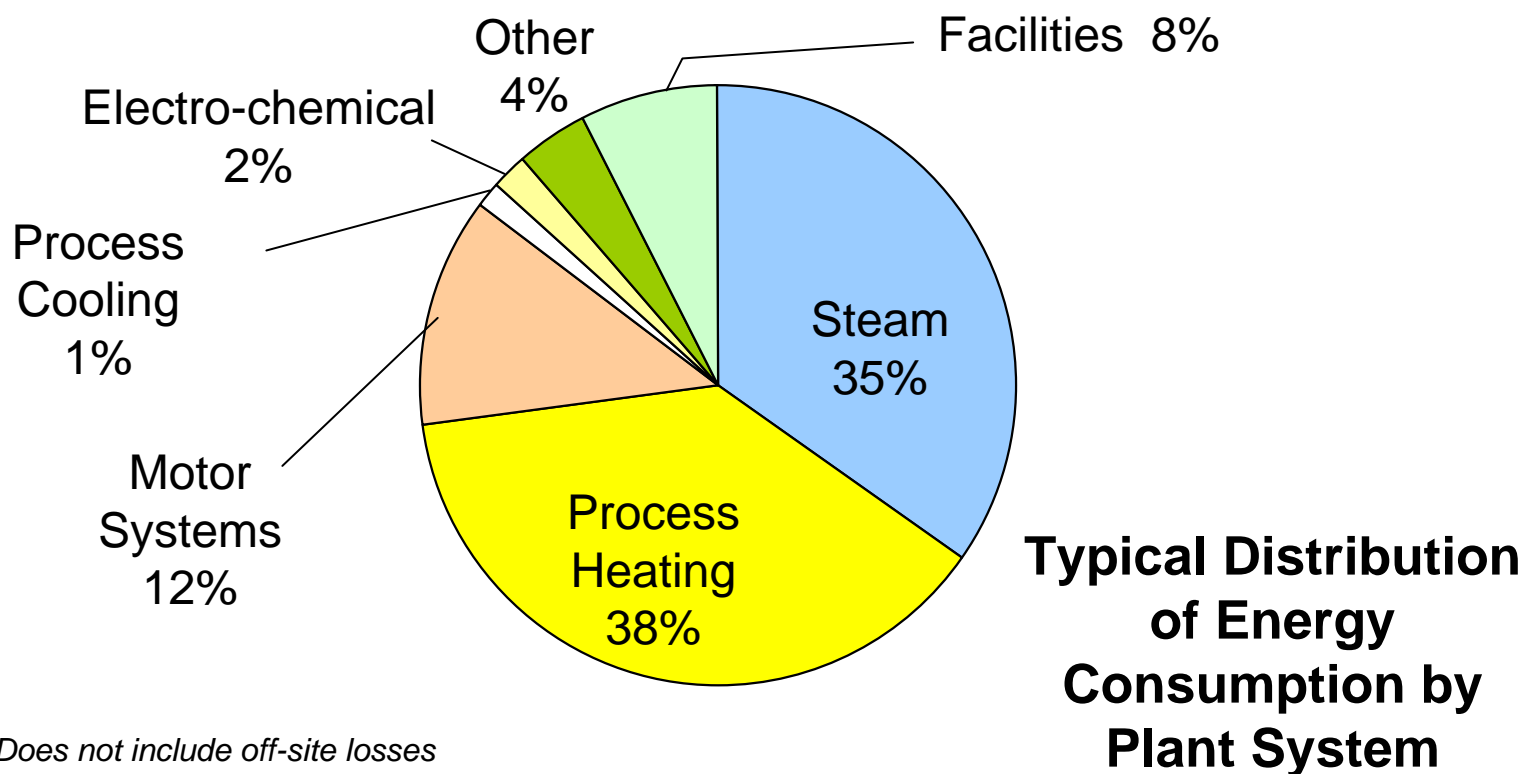


# Energy Savings Assessments

- 200 assessments to be conducted in largest energy consuming plants (> 1 Trillion Btu per year)
  - ESA Experts will lead assessments using the DOE software tools (*20% of these experts are from IACs*)
  - Plant personnel will be part of the assessment team
  - Teams will focus on either steam generation or process heating
  - Plant personnel and affiliates will be trained on DOE software tools
- Additional assessments for plants below 1 Trillion Btu per year will be conducted by Industrial Assessment Centers (*currently we have 300 requests for these assessments*)



# ESA Focus: Steam and Process Heating





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## Partnerships





# Becoming a Save Energy Now Partner

- **Plants/Companies**
  - ✓ Agree to assess energy savings opportunities in their plant/company and take steps to implement changes when cost effective
  - ✓ Agree to be recognized as a Save Energy Now Partner on the DOE website
- **Trade Associations/ States /Utilities/ Suppliers / Other Orgs.**
  - ✓ Agree to work with their members/customers to find ways to assess energy savings opportunities in manufacturing facilities and ways to implement cost effective improvements
  - ✓ Agree to be recognized as a Save Energy Now Partner on the DOE website



# Benefits of Partnering

- Gain recognition for participation and contributions
- Access customized technical assistance from experts
- Stay informed through *ITP E-Bulletin* and *Energy Matters*, and Save Energy Now e-mail updates
- Access ITP's portfolio of up-to-date technical information
- Work with ITP to jointly develop or market informational materials
- Participate in or sponsor training, Webcasts, workshops, and special Save Energy Now events
- Receive assistance with planning and hosting other outreach activities



# Identifying Key Partners

- Companies conducting ESAs
- States with new SEP special project agreements, other large industrial states
- Equipment Suppliers & Service Companies – Enlist allied partners and others willing to pitch SEN to their customers
- Associations/Other Orgs. – AMMEX members, NASEO, ASE, ACEEE, Energy Solutions
- Utilities – targeted to utilities actively working with industry customers in high natural gas use areas





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Outreach to 50,000 Plants





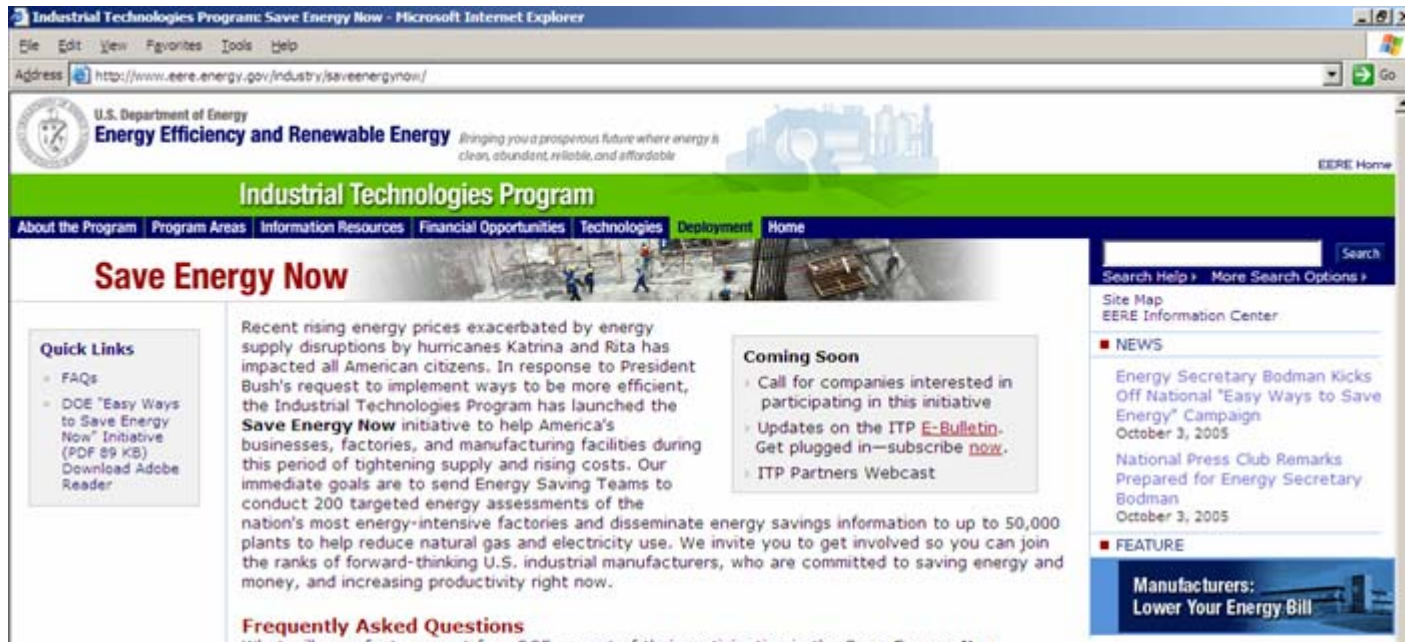
# “Save Energy Now” Outreach Goal: 50,000 Plants

- Utilize a wide variety of information materials, web tools and technical assistance
- Work with our existing partners and develop new partnerships to significantly increase our “reach”





# Save Energy Now Website

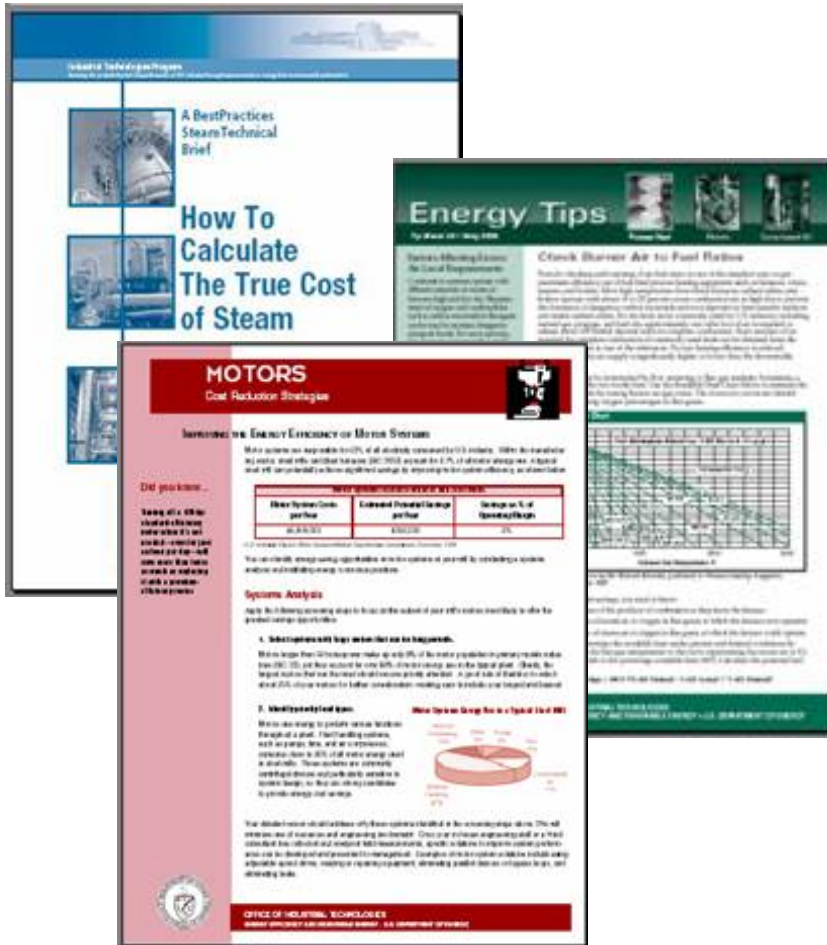


## Save Energy Now Website

[www.eere.energy.gov/industry/saveenergynow](http://www.eere.energy.gov/industry/saveenergynow)



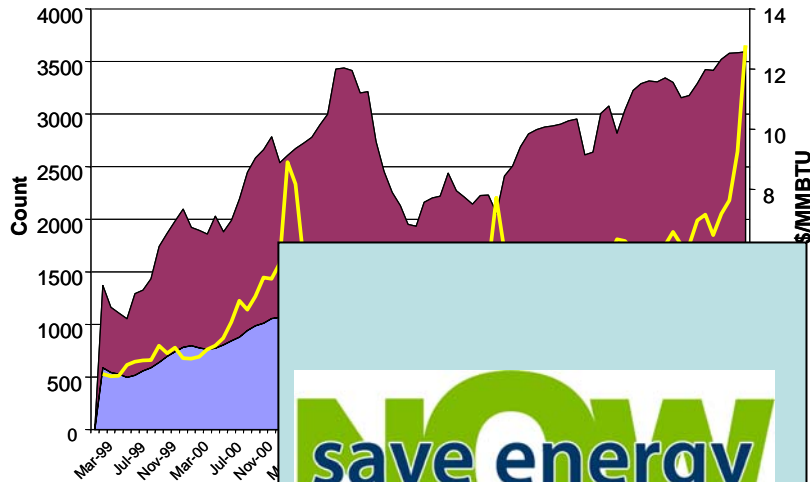
# Information



- Tip sheets, case studies, brochures, technical briefs etc.
- *Energy Matters* newsletter
- Industrial Technologies Monthly e-bulletin
- Software tools and training
- Web sites
- **New:**
  - Packets of Information for Plants
  - Save Energy Now CD



# Save Energy Now CD



**save energy NOW**

Resource CD

Calculations for Savings - Wall Loss Reduction

	Base	New
Surface Temp. (F)	300	195

Cost of Air Infiltration in a Furnace

Stack	Stack	Stack
Open	Open	Open
Comb	Comb	Comb
Gross	Gross	Gross
Cost of	Cost of	Cost of
Operat	Operat	Operat
Savings	Savings	Savings
Temp	Temp	Temp
Fuel c	Fuel c	Fuel c
Opera	Opera	Opera
Air inf	Air inf	Air inf
Cost o	Cost o	Cost o

Introduction

Energy Efficiency	Efficiency Improvement	O2 Enrichment	Heat Input
	Current	New	
Oxygen % in Flue Gas	1	2	
Flue Gas Temperature (Deg. F.)	900	900	
Excess Air (%)	37.47	9.61	
Combustion Air Temp (Deg. F.)	100	550	
Available Heat (L of Gross Heating Value)	66.58	88.83	
Fuel Savings (%)	0.00	17.73	
Energy Input (Million Btu/yr)	100	82.27	

Process Heating Resources

- Visible and accessible compendium of ITP's abundant resources
- Near-term focus fact sheets, tip sheets, case studies, sourcebooks, software, etc.
- Features video tour of potential energy savings, getting started assessment guide, and quick interactive quiz
- A key resource for 50,000 plants to distribute through regional forums, hotline requests, and make available to partners for professional and trade meetings



# EERE Information Center

- Information on EERE products/services
- Unbiased, customized technical and programmatic assistance to help achieve industrial energy savings
- Experts help thousands of industries as well as consultants, vendors, government agencies, and others that serve them
- IACs will provide technical assistance, as needed, in response to caller demand



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# Training Opportunities

- Awareness Presentations by Qualified Specialists (1-2 hours)
- Webcasts by IACs (1-2 hours)
- End-user training (1-2 days)
- Qualified Specialist training (2-3 days)



See [www.eere.energy.gov/industry/bestpractices](http://www.eere.energy.gov/industry/bestpractices) for details



# IACs and Save Energy Now

- The outstanding university-based centers within the IAC have an impressive history of responding to DOE initiatives:
  - IACs have conducted Plant-Wide Assessments
  - IAC faculty and students are DOE Qualified Specialists (currently 48 of 345 specialists are from IACs)
  - IACs have cultivated regional relationships with industry and state organizations through DOE's Industries of the Future
  - IACs have conducted ITP showcase assessments
  - IACs have developed and tested BestPractices software tools
  - IACs have contributed to BestPractices publications
  - The DOE's Federal Energy Management Program uses IACs to conduct assessments at large, federal industrial facilities



# IACs and Save Energy Now

- Similarly, for the Save Energy Now Initiative:
  - 20% of ESA experts are associated with IACs
  - IAC centers to conduct assessments at plants that requested ESAs, but didn't meet the high consumption criteria (*we currently have 300 plants in this category*)
  - IACs will conduct monthly webcasts
  - Each IAC will conduct workshops locally on technical issues related to SEN
  - IACs will disseminate SEN materials to their entire client database
  - Alumni who are corporate energy managers are participating in ESAs (e.g. Superior Industries)



# In Closing

- The industrial sector is responsible for 1/3 of U.S. energy consumption
- Of 220,000 manufacturing plants in the U.S., 6,800 energy-intensive plants are responsible for 53% of the consumption by the sector
- DOE established Save Energy Now to help US industry address rising energy costs
- SEN Initiative activities include energy assessments, partnerships and outreach
- The IACs provide a key infrastructure that helps DOE rapidly deploy the SEN Initiative through IAC experts, assessments, training and outreach
- Keep up the good work!