

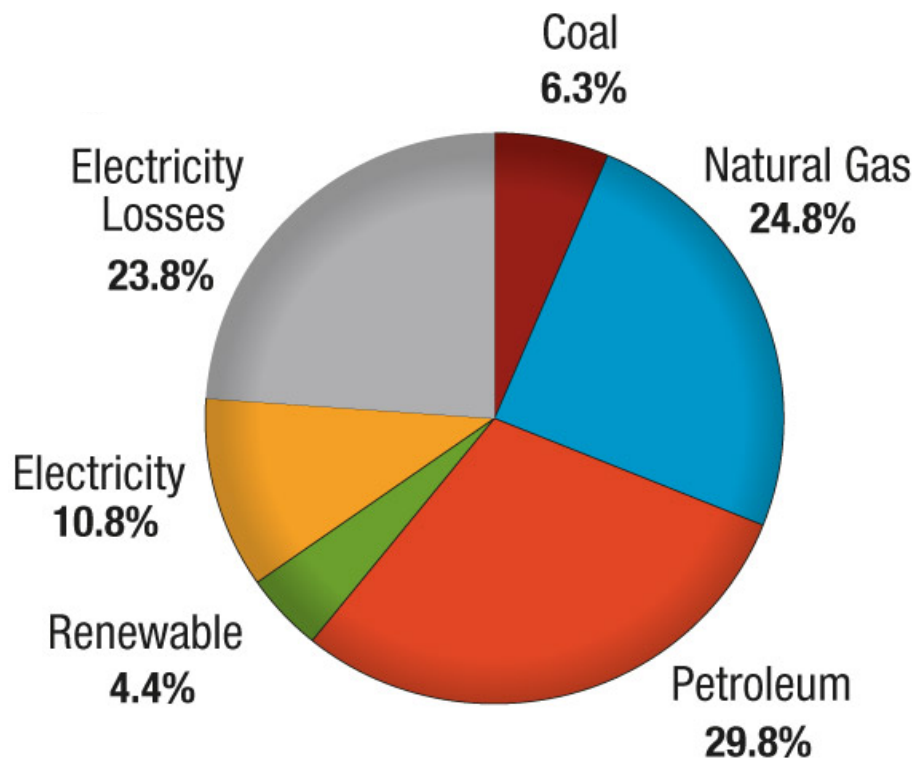


Superior Energy Performance Partnership:
Reducing Energy Intensity in
U.S. Industrial Plants
December, 2007

U.S. industrial sector represents a big opportunity

32 quads or ~33% of total U.S. energy consumption

>200,000 sites
14.3 million jobs
\$5,900 billion in shipments
\$980 billion in exports



U.S. industry represents:

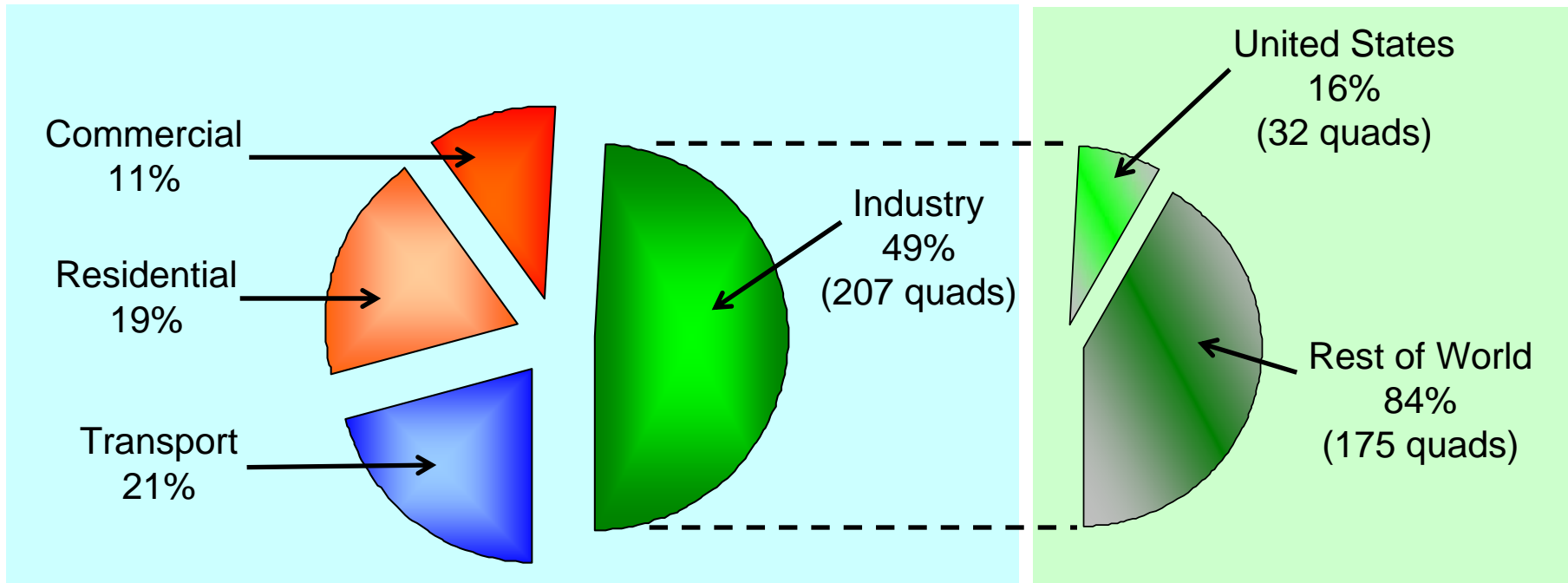
- 37% of U.S. natural gas demand
- 29% of U.S. electricity demand
- 30% of U.S. greenhouse gas emissions
- More energy use than any other single G8 nation
- Large opportunities for
 - Energy reduction
 - Emissions reductions
 - Fuel flexibility

Industrial Energy is 49% of World Energy Use

207 quads consumed by industry worldwide

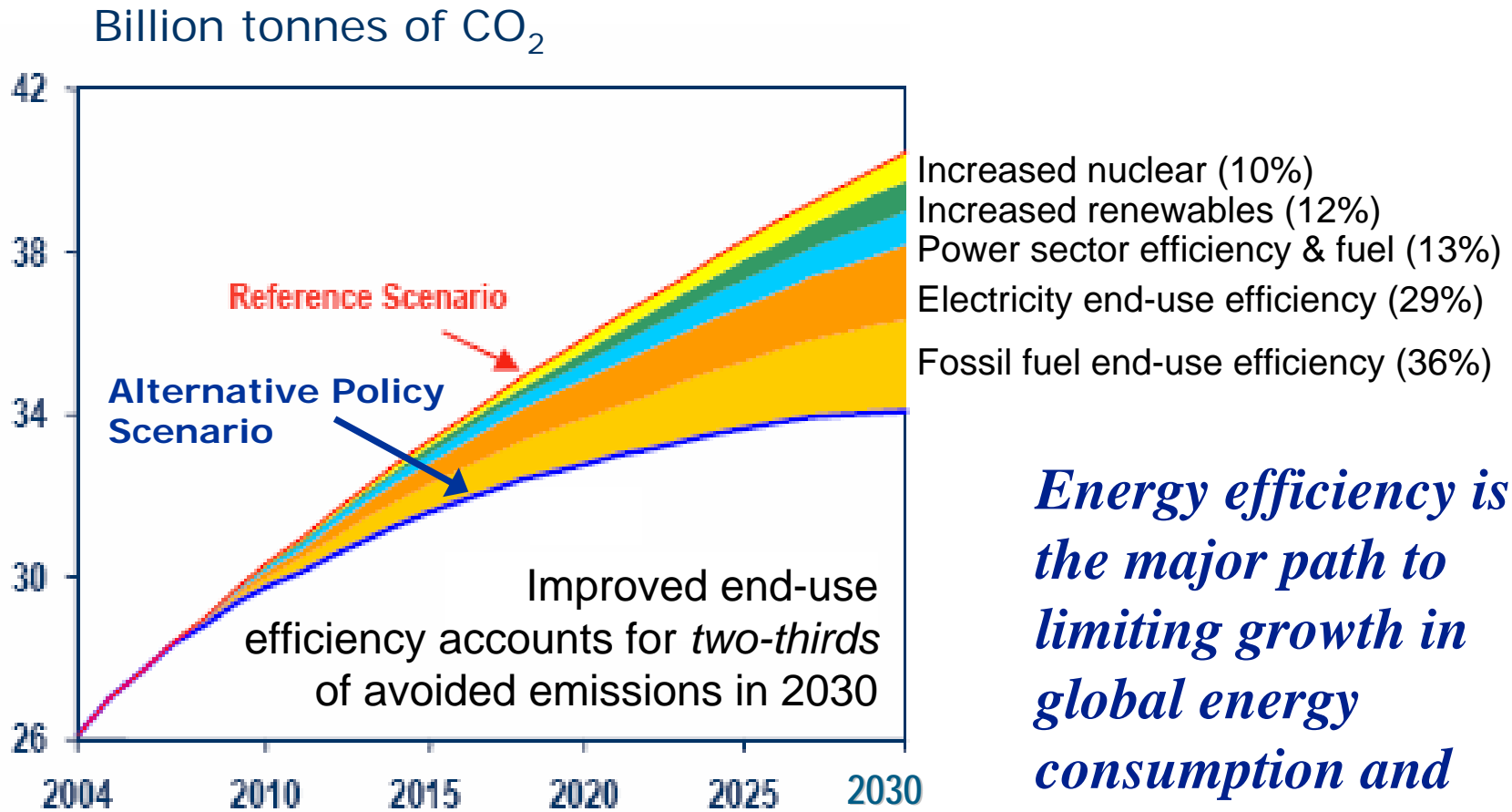
2003 World Energy Use: 421 quads

Industry: 207 quads



16% of industrial energy is consumed in the United States

Energy efficiency and Carbon Emission Reductions



Energy efficiency is the major path to limiting growth in global energy consumption and carbon emissions

Source: International Energy Agency, World Energy Outlook. 2006

U.S. Industrial Sector

Current Situation

- ❑ Energy efficiency peripheral to most corporate business strategies
- ❑ R&D expenditures minimal for process and energy technologies
- ❑ Some US plants are best-in-class; application of state-of-the art technology; excellence in energy management
- ❑ Combined heat & power applications are common place, but not as prolific as in EU and Japan
- ❑ Lack of incentives to invest in energy efficiency technologies
- ❑ No common standard for managing energy
- ❑ Insufficient energy management skills in work force
- ❑ Limited energy fuel choices
- ❑ Volatile US energy prices
- ❑ Uncertain future environmental regulations

Desired Future

- ❑ U.S. world leader in manufacturing energy efficiency
- ❑ U.S. plants best-in-class for energy-efficient technology
- ❑ U.S. plants certified as strong energy managers; continually improving across the supply chain
- ❑ U.S. is leading exporter of energy efficiency technologies and solutions
- ❑ Incentives to stimulate investment in energy efficiency
- ❑ Energy management expertise abounds in plants and market
- ❑ Energy security with flexible and affordable energy choices

What would help *all* U.S. industry capture these energy savings?

- Provide industrial plants with easier access to information and tools for managing energy
- Provide incentives and recognition for effective industrial energy management
 - Integrate energy management into existing management systems (treat energy like every other resource)
- Develop market value for effective energy management and the resulting energy savings and carbon reductions
- Meet the R&D and technological support needs required to help industry reach an annual 2.5% energy intensity reduction goal through 2016



CERTIFIED

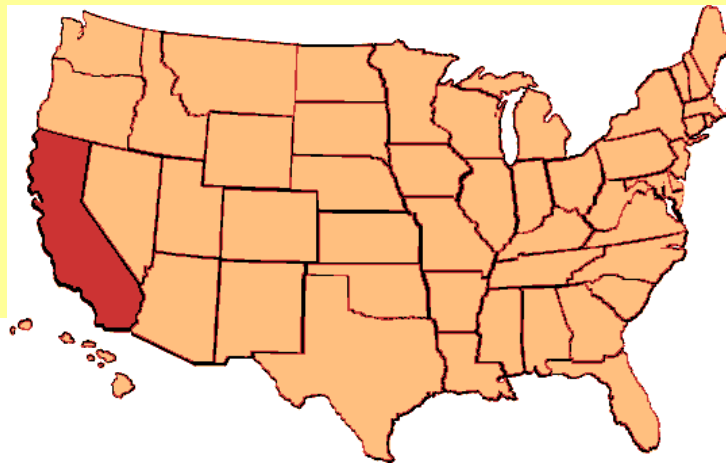
Superior Energy Performance Partnership Goals

- U.S. industrial corporations, manufacturing plants and trade associations work in cooperation with Federal agencies to deploy a variety of market transforming initiatives and activities that accelerates the entire industrial sector to an energy intensity improvement **rate of 2.5 percent per year by 2017.**
- By 2017, **reduce the US industrial sector's energy intensity by 25 percent relative to 2006.**

Superior Energy Performance Partnership Goal Will Yield Large U.S Energy Saving Benefit

Reducing U.S. Industry's Energy Intensity by 25 percent (2007 to 2016)

- Saves 8.4 quadrillion Btu per year
- Equal to energy consumption of state of California in one year; every house, commercial building, automobile and manufacturing plant



Superior Energy Performance (SEP) Partnership

SEP Work Plan

- ❑ Develop Quick Start website to help plants initiate energy management programs
- ❑ Coordinate U.S. participation in ISO energy management standard development
- ❑ Design “Partner Plant” energy management program
- ❑ Design ANSI plant certification program
- ❑ Assist DOE to design and execute EAct Section 106 voluntary corporate energy efficiency program

Partners

- U.S. Industry
- U.S. Department of Energy Industrial Technologies Program
- U.S. Environmental Protection Agency ENERGY STAR Program
- U.S. Department of Commerce Manufacturing Extension Partnership
- American National Standards Institute
- Texas Industries of the Future

SEP Interim Steering Committee

- Determine the scope of work to support of the SEP initiative through April 2008
- Develop an implementation plan, including
 - Establish voluntary working groups as required
 - Work with DOE, EPA, and NIST to secure required resources
 - Develop a transition plan to a more permanent organizational structure that supports the goals of the SEP

Interim Steering Committee Members

Representative	Organization
Bill Allemon	Ford
Joe Almaguer	Dow Chemical
Bill Bailey	DuPont
Sean Diamond	Texas Petrochemical
Tom Dunn	Weyerhaeuser
Betsy Dutrow	EPA
Fred Fendt	Rohm and Haas
Martha Gibbons	IPSCO Steel
Jim Hoffman	Huntsman Chemical
Greg Jason	Cargill
Michele Mazza	Owens Corning
Dan Pitkin	NIST
Brad Reed	Toyota
Paul Scheihing	DOE ITP
Steve Schultz	3M
Don Verdiani	Sunoco
Glen Wieger	Eastman Chemical
Jeff Yigdall	PPG

What is an ANSI Certified Plant?

- ▣ A plant which is continually improving in energy intensity (by a to-be-defined amount) and has demonstrated the adoption of energy management practices that meets ANSI standards
- ▣ The plant's energy intensity improvement and compliance with standards are validated by a third party

What is an ANSI Certified Plant?, continued

- Meets all Energy Management Standards (revision of existing ANSI standard). **Eventually an ISO energy management standard**
- Applies System Assessment Standards for industrial systems (initially pumping, compressed air, steam, process heating) to assess plant facilities
- May use certified practitioners, recognized by third party to assist in:
 - Complying with energy management standards
 - Implementing system assessment standards
- Uses measurement and validation experts, recognized by a third party, to verify implemented energy savings
- Uses an ANSI-accredited process to achieve third-party voluntary plant certification

Key Milestones

- Nov. 2007: Identify and select ANSI-accredited standards developer for system assessment standards
- May 2008: Begin field testing of ANSI energy management standard and system assessment standards
- July 2008: Select third-party certifying organization
- Sept. 2008: Launch pilot certification program (Texas IOF assisting)
- April 2009: Begin field testing of measurement and verification methodology in pilot plants
- June 2009: Begin training certified practitioners in energy management and system assessments
- Dec. 2009: First plants are ANSI certified for energy efficiency, based on results from pilot program
- March 2010: National launch of third-party certification program
- Dec. 2011: Third Party Certifier self-sufficient on fee-based system

Moving U.S. industry to greater energy efficiency

- ❑ Moving the US industrial sector to an energy intensity improvement rate of 2.5% per year.
- ❑ Certifying plant energy management programs; create transparency for continual energy efficiency improvement
- ❑ Unite US corporate leaders in energy efficiency; commit to 25% energy intensity improvement over 10 years (through EPEAT section 106)
- ❑ Empowering the supply chain to demand energy efficiency
- ❑ Enhancing the business case for energy efficiency
- ❑ Paving the way for U.S. global leadership in energy efficiency technologies and practices

