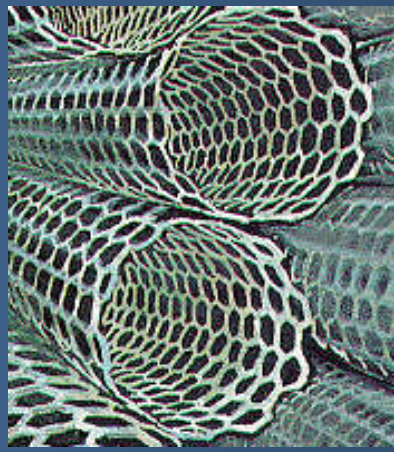
U.S. Department of Energy
Energy Efficiency and Renewable Energy
Bringing you a prosperous future where energy is clean, abundant, reliable, and affordable

Save ENERGY Now

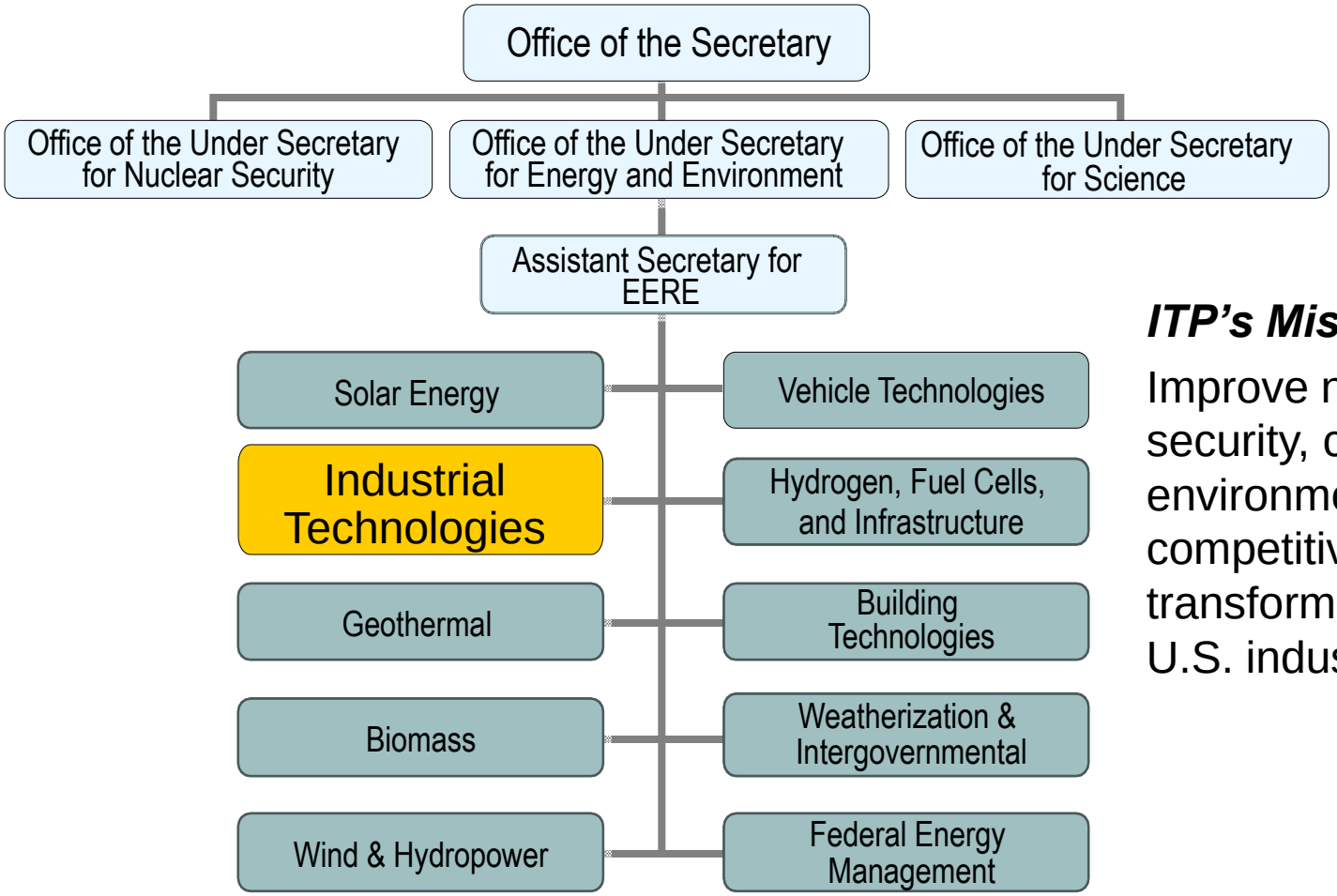





U.S. Department of Energy, Industrial Technologies Program

Program Overview

Industrial Technologies Program in DOE and EERE



ITP's Mission:

Improve national energy security, climate, environment, and economic competitiveness by transforming the way U.S. industry uses energy

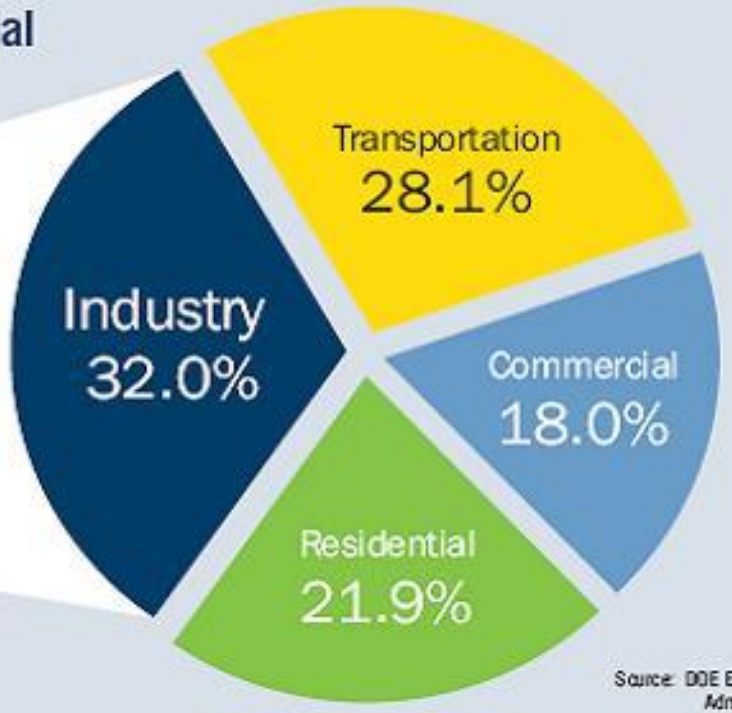
Industrial Technologies Program (ITP): Mission

Improve our nation's energy security, climate, environment, and economic competitiveness by transforming the way U.S. industry uses energy

Reducing U.S. industrial energy intensity is essential to achieving national energy and carbon goals

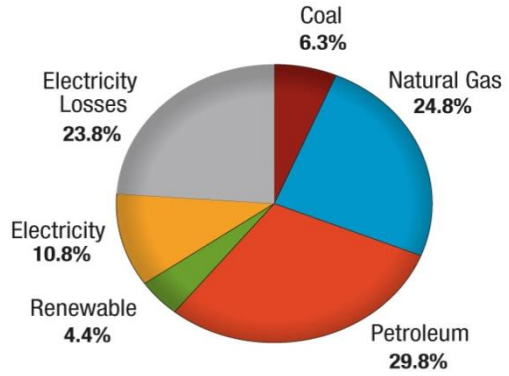
Petroleum	38.1%
Natural Gas	33.3%
Electricity*	13.5%
Coal and Coke	8.5%
Renewable Energy	6.6%

* Excludes losses

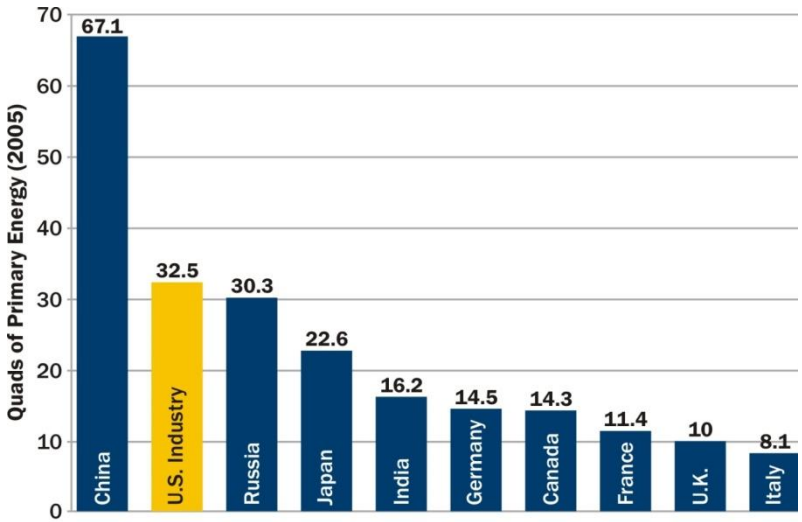


Source: DOE Energy Information Administration, 2006.

U.S. Industry: Key Opportunity in Energy & Emissions



Industrial Sector Energy Consumption ~ 32 Quads



Source: U.S. Industry Data DOE/AER 2007; Other countries DOE/International Energy Annual 2005

U.S. Industrial Sector

- >200,000 sites
- Nearly 14 million manufacturing jobs
- Over $6 trillion in goods provided
- Over $1 trillion in exports
- Consumes more energy than any other sector of the economy (~32 quads)
- Responsible for ~1,660 $MMTCO_2$/year from energy consumption
- Manufacturing makes the highest contribution to U.S. GDP (12%)
- Produces nearly 1/4th of world manufacturing output
- Spurs job creation and investment in other sectors

ITP Directly Supports DOE Strategic Goals

DOE Goals include

- Promote America's energy security
- Increase energy diversity
- Reduce environmental impacts of energy
- Increase energy productivity

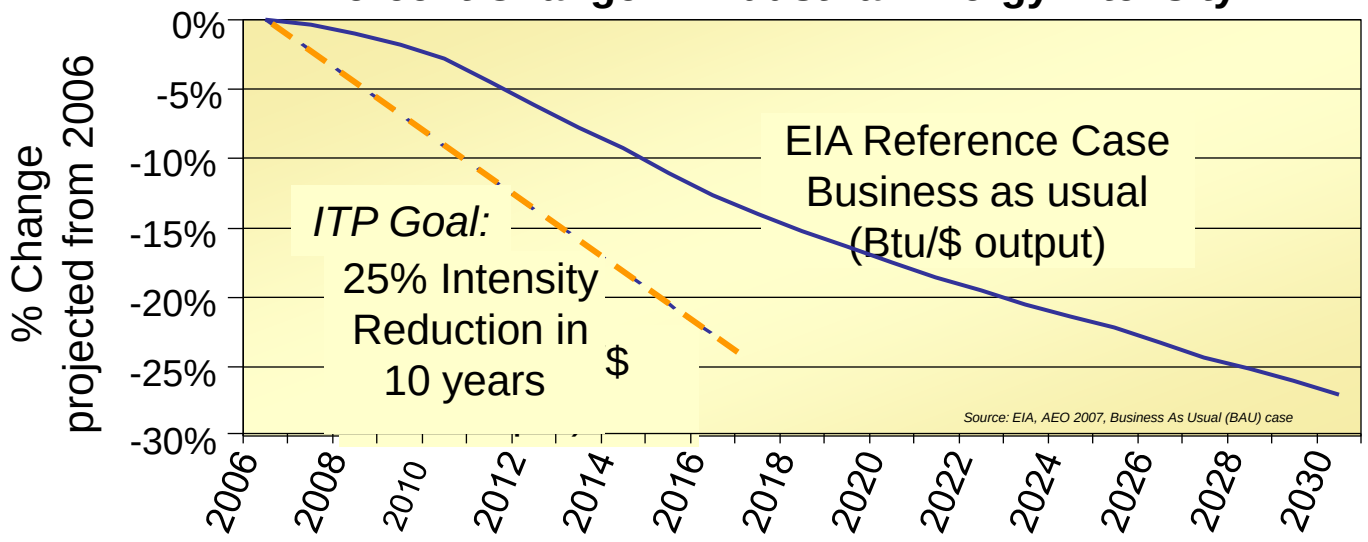
EERE Goals include

- Dramatically reduce, or even end, dependence on foreign oil (Goal 1)
- Increase the efficiency/ reduce the energy intensity of industry (Goal 6)

ITP Goals

- Reduce industrial energy intensity by 25% in 10 years
- Reduce the projected growth of U.S. carbon emissions between 2006 to 2030 by 70%
- Establish the U.S. as the Global Leader in Energy Management

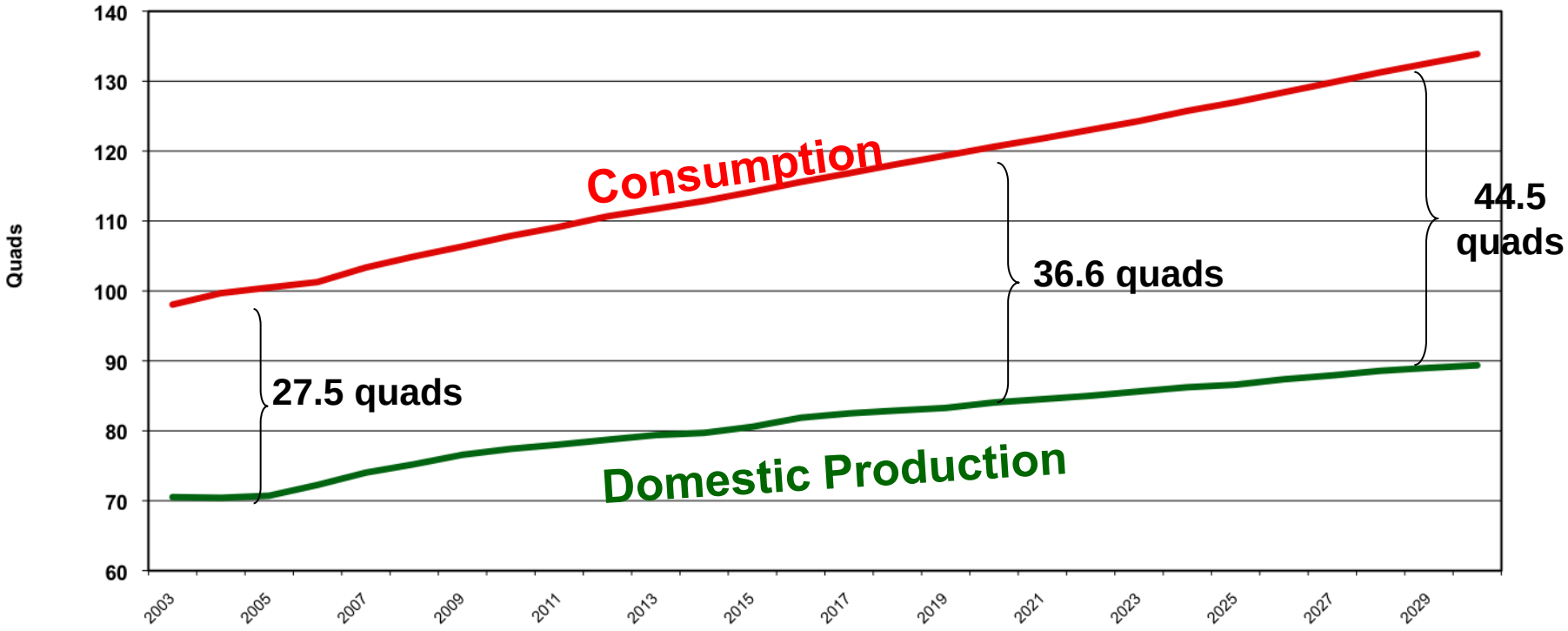
Percent Change in Industrial Energy Intensity



A recent McKinsey study stated energy efficiency is the most cost-effective near-term carbon reduction option

- *Industry represents 38% of the total global opportunity for reducing carbon through energy efficiency*

The Energy Gap Between U.S. Domestic Production and Consumption Projected to Worsen



*We need to act on both **supply** and **demand**.*

Source: EIA AEO 2006

Energy Opportunities in the Industrial Sector

More Efficient Operating and Maintenance Practices: Best operating practices can be disseminated and implemented rapidly at negligible cost to enhance operating efficiency in manufacturing facilities in the near- to mid-term.

Increased Adoption of State-of-the-Art Technology: Improved energy efficiency through rapid adoption of currently available technology is the *best* near to mid-term strategy for better balancing energy supply and demand.

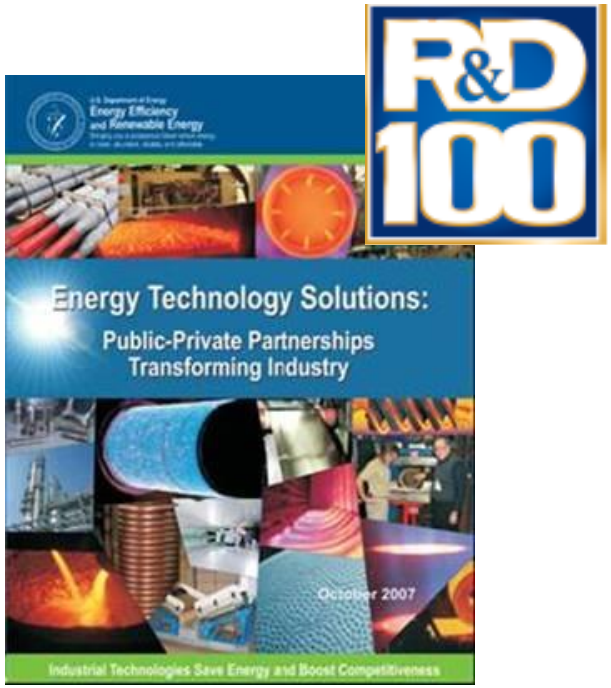
Fuel and Feedstock Substitution: Manufacturers need the flexibility to adapt to dynamic energy prices and supply issues.

Development of Advanced Technology: Progress toward long-term national goals for energy and the environment rely on continuous technology innovation. The technologies required to address today's challenges can require a decade or more to progress from basic science to commercialization.

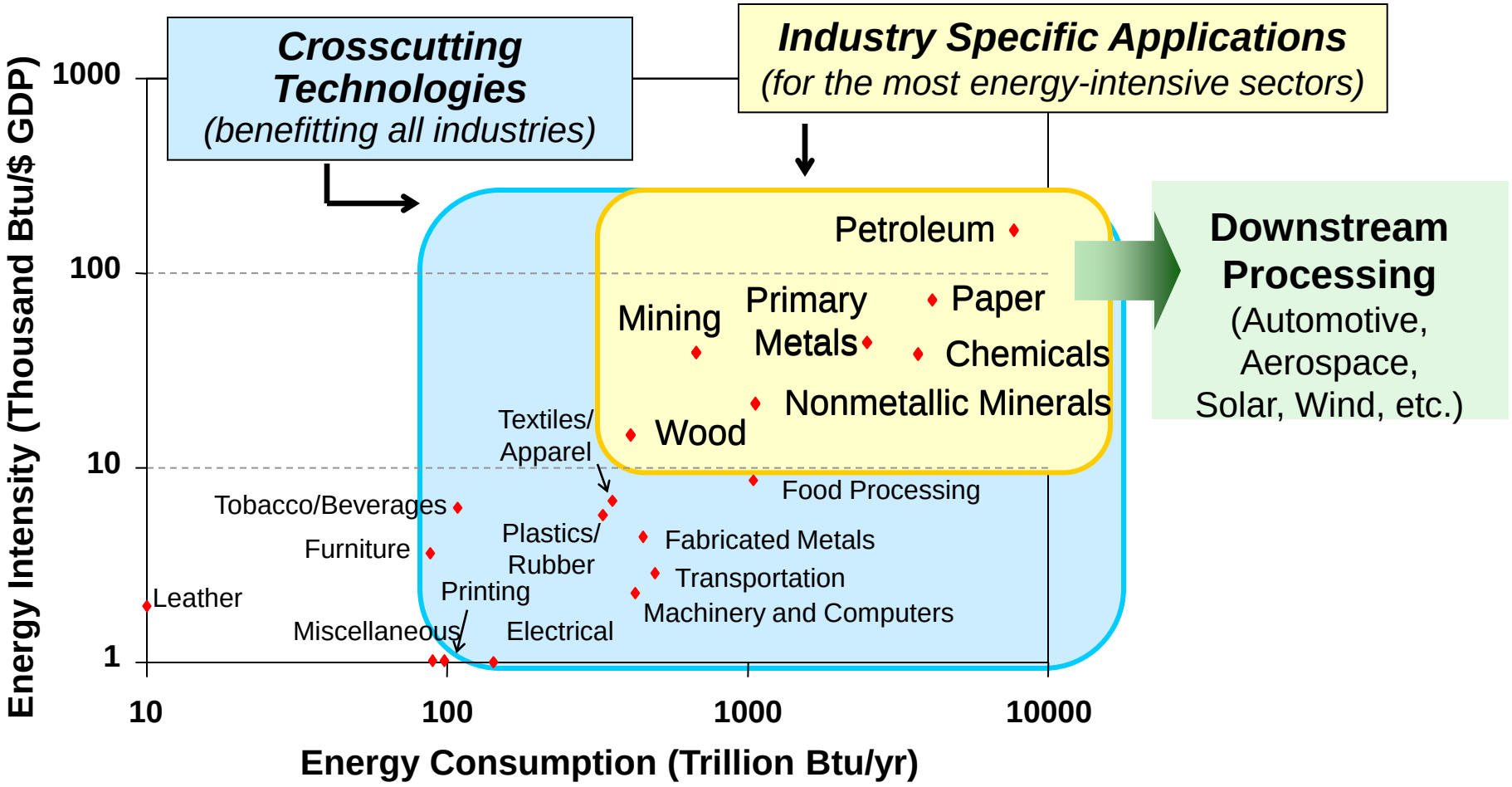
ITP Delivers Results

Working with industry, ITP has successfully developed and moved cutting-edge technologies and energy-saving measures into practice.

- Over 220 technologies commercialized
- 215 patents between 1994 and 2009
- 51 R&D 100 awards since 1991
- 8.5 quads of energy saved and reduced carbon emissions by 693 MMT CO_2



R&D Focus Shift



Industry Spotlight

- Tennessee Solar Industry Needs Assessment
  - Dr. Chris Wright, Tennessee Solar Institute
- Ampulse: c-Si Thin-Film Solar PV
  - Steve Hane, President and Chief Executive Officer
- Solar Opportunities: Hemlock Semiconductor
  - Terry Strange, Site Manager Clarksville, TN
- Suniva, Inc. Technology Roadmap and Production
  - Dr. Ben Damiani, Senior Engineer
- Asahi Glass Company: Solar Energy Markets and Engineered Products
  - Ernest Caldwell
- Low Cost Multi-Crystalline Silicon
  - John Carberry, Mossey Creek Solar