

Turning Visions INTO REALITY

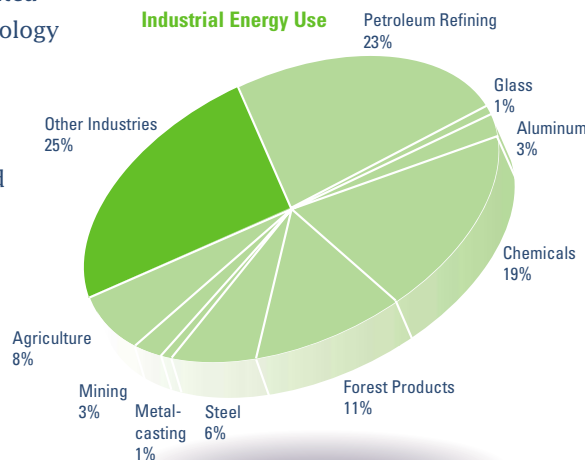


Walk into a plant of one of the U.S. Department of Energy's (DOE) industrial research partners and you are likely to see non-toxic, biodegradable solvents; energy-saving, low-emission kilns; and manufacturing processes driven by hot flue gases. These are just a few of the innovative systems DOE and its Office of Industrial Technologies (OIT) bring to U.S. industry, helping them to lower processing costs, energy use, and environmental impacts. In partnership with industry, OIT is helping to develop, demonstrate, and deploy technologies that could save more than a quadrillion British thermal units (Btu) of energy a year (equal to about 178 million barrels of oil), increasing to 1.47 quads by 2010, and 4.5 quads by 2020. Greenhouse gas emissions could also be reduced by more than 25 million tons each year as a result of these new technologies and processes.

Industries of the Future

Since the mid-1990s, OIT has operated under an industry-driven, customer-focused strategy known as *Industries of the Future*. Under this strategy, OIT brings together stakeholders in the most energy-intensive industries—including steel, metalcasting, aluminum, glass, mining, agriculture, chemicals, forest products, and petroleum (which together account for about 75% of all U.S. industrial energy use)—to create a vision of the future for each industry and to devise a strategic plan that will help them achieve their vision. This strategy enables OIT and other technology-supporting organizations to better target their customers' needs and make maximum use of limited resources. In response to technology needs identified by industry in its strategic plans, OIT issues competitive solicitations that result in cost-shared, integrated teams including industrial technology users, suppliers, universities, and DOE national laboratories. OIT supports precompetitive technology that can benefit a wide range of U.S. industry.

OIT works with industry to cooperatively identify and pursue research, development, and demonstration of ultra-high-efficiency power systems, along with other key technologies that are important to a large cross-section of U.S. industries. For example, as part of DOE's focus on clean energy, OIT supports the development and demonstration of systems for industry, including advanced turbine systems, reciprocating engines, and microturbines. These clean energy technologies have potential applications across a broad spectrum of different industries and focus on increasing the efficiency of industrial systems by 15%.



The petroleum industry, which accounts for 23% of all U.S. industrial energy use, is working with OIT to develop an industry-wide plan that will lead to greater adoption of energy-efficient technologies.

What's in it for your company, your industry, and the nation?

- Your company:**
 - Reduces research and development costs and risks
 - Leverages funds and information resources
 - Enhances corporate image
- Your industry:**
 - Saves energy and materials
 - Facilitates cost-effective regulatory compliance
 - Increases productivity and reduces waste
 - Improves its global competitiveness
- The nation gains:**
 - A cleaner, healthier environment
 - Greater energy security
 - A more robust economy

OIT supports the development and demonstration of ultra-high-efficiency power systems for industry, including advanced turbine technology.

THE OFFICE OF INDUSTRIAL TECHNOLOGIES



The mining industry, in partnership with OIT, is helping to reduce energy use in this energy-intensive industry.

"The [Industries of the Future process] has allowed us not only to identify but to prioritize the types of things that really make sense for us to work on together."

**TOM USHER,
CEO OF USX CORPORATION,
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Contacts

OIT has numerous information resources and tools to help industry become more energy efficient. Check out our software, databases, financing information, publications, industry visions, roadmaps, and more on our Web site at www.oit.doe.gov.



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An Integrated Delivery Strategy

To better satisfy customer needs, OIT employs customer-focused, integrated delivery of its many products and services. All applicable technologies, tools, and expertise from different areas of the organization are brought to the customer in an integrated fashion. For example, a firm that has just learned how to save thousands of dollars through an Industrial Assessment Center energy-use audit might also benefit from other valuable services and technologies that OIT offers, such as technology advances in motors, sensors and controls, or industrial materials. With OIT's integrated delivery mechanisms in place, industries will be able to take advantage of the full range of opportunities available from OIT.

"Our ultimate goal is to ensure that our customers can more easily and rapidly take advantage of any emerging technology or service in our wide-ranging portfolio," says Dan Reicher,

Assistant Secretary of EERE. "We want to help them use energy more efficiently, improve productivity, and reduce waste and emissions." About 120 OIT-supported emerging technologies are expected to be commercialized within the next two years.

Partnerships Pay Off

Industry accounts for 37% of the energy we consume as a nation. Many manufacturing processes could be made more efficient. OIT's collaborations with industry improve the energy efficiency and productivity of industrial processes and are reflected in profit margins.

Faced with the rapid pace of technology innovation and the rising cost of R&D, few organizations possess the resources needed to develop advanced technologies alone. Driven by pressures to reduce costs and improve productivity, U.S. industry is realizing that technology partnerships such as those supported by OIT pay off in improved energy efficiency and competitiveness.

In August 1999, President Bill Clinton announced a national bioenergy initiative that will accelerate the use of biomass to produce energy and chemicals. Biomass is any organic material that is produced by the process of photosynthesis. It can be found in crops and crop wastes and residues, wood and wood wastes and residues, animal wastes, municipal wastes, and aquatic plants. For industry, this initiative will build on existing efforts within OIT to create new and economically viable options for farmers, foresters, and chemical manufacturers to use and profit from biobased commodities, products, and services.