

# iac

## Industrial Assessment Centers



**Creating bottom-line returns for manufacturers  
and big dividends for our nation's future**



**Office of Industrial Technologies**



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

# results

## Making a real difference for small and mid-sized manufacturers

With all the talk about “win-win partnerships” these days, how can you separate the reality from cliché?

By looking at results, that’s how—the kind of results delivered by the Industrial Assessment Centers.



Since the Department of Energy started the program in 1976, Industrial Assessment Centers (IACs) have:

- Educated thousands of senior undergraduate and graduate-level engineering students on fundamentals of industrial energy- and resource-efficiency.
- Saved American companies more than \$700 million through efficiency and productivity improvements.
- Enabled small and mid-sized manufacturers to save enough energy to power a city the size of Boston for a year.
- Helped to create and maintain more than 1.5 million industry jobs in the United States.

### Manufacturers enjoy fast results from IAC assessments, with minimal time investment

#### Step 1

The university-based IAC team conducts a survey, followed by a one- to two-day in-plant audit of energy, waste, and productivity.

#### Step 2

Within 60 days, the plant manager receives a confidential report detailing the team’s analysis and money-saving recommendations, along with estimates of related costs, performance, and payback periods.

#### Step 3

In six to nine months, the IAC follows up with a phone call to the plant manager to see which, if any, recommendations were implemented.

## Creating value for manufacturers is just the beginning

Located at 26 universities around the country, IACs provide no-cost assessments to small and mid-sized manufacturers. Students do the engineering measurements in auditing how each facility utilizes energy and resources. Then, with the guidance of their professors, they identify opportunities to save energy, reduce waste, and improve productivity.

### Who wins?

**Participating companies.** On average, an IAC assessment yields recommendations that can save a manufacturing facility \$55,000 annually. Payback on implementation costs averages a fast 12 months ... and the savings keep falling right to the bottom line, year after year.

**Participating universities.** Through the IACs, universities build valuable local industry relationships to maintain a practical focus in their engineering curriculum. They also gain an edge in attracting and retaining top undergraduate and graduate engineering students.

**Participating students.** The next generation of energy-savvy engineers is being prepared in today's IAC program. Each year, 150 students participate, gaining valuable hands-on experience in auditing key industrial operations, systems, and processes—experience that can jump-start their engineering careers.

**U.S. taxpayers.** The Department of Energy's Office of Industrial Technologies provides financial and technical support to the IACs. The nation's economy benefits from more competitive small and mid-sized manufacturers—a sector that accounts for over 50 percent of U.S. manufacturing employment. Other returns? Enhanced energy security and environmental benefits from decreased energy and resource use.



*"My experience with the IAC really had a lot to do with my job-hunting success. I was able to discuss intelligently a number of things I learned through my IAC work that most engineering undergraduates would not know, such as the relative merits of screw and reciprocating compressors, the benefits of cells over assembly lines, and the advantages of JIT inventories."*

David T. Flanagan  
Project Engineer  
Hannibal Cable Operations, North

*"I am living testimony to the benefits of the IAC program. The program allowed me to expand my engineering knowledge by experiencing first-hand the issues that manufacturers address on a daily basis."*

Laura M. Buchanan  
Engineer  
Alabama Power, a Southern Company

## IACs are the gateway to a wealth of services and tools

As part of the Department of Energy's Office of Industrial Technologies (OIT), IACs provide small and mid-sized manufacturers with no-cost assessments of their best opportunities for saving energy, reducing waste, and enhancing productivity. IAC assessments are confidential, and participating plants incur no obligation to act on any recommendations. Yet many facilities realize attractive returns from implementing IAC recommendations. And because savings in energy and resource use recur year after year, cumulative bottom-line benefits can be impressive.

But the story doesn't end there. OIT provides a whole suite of programs, services, and tools aimed at promoting more competitive, energy-efficient, and resource-efficient U.S. industries.



### Precision Castparts Corporation's actual savings exceed recommendations

By installing a suction system to remove and separate casting sand for reuse, this maker of high-quality precision metal castings saved thousands of dollars a year in sand and labor costs. And, when the company implemented IAC recommendations for disposing of wax and ceramic waste, actual savings exceeded the estimate by \$116,200.

- Energy-related recommendations – 6
- Total recommended cost savings – \$73,300/year
- Waste-related recommendations – 3
- Total recommended cost savings – \$79,000/year
- Productivity-related recommendations – 1
- Total recommended cost savings – \$27,500/year
- Total recommended savings – \$179,800/year
- Total implemented savings – \$241,200/year



## Promising opportunities for the future ...

OIT's overriding strategy is the Industries of the Future process, which focuses on nine of our nation's most materials- and energy-intensive industries: agriculture, forest products, mining, aluminum, glass, petroleum, chemicals, metalcasting, and steel.

Through Industries of the Future, leaders of each of these industries are defining their 20-year vision of a more productive, competitive, and energy-efficient future, and are developing and implementing the technology roadmap that can help make their vision a reality. IACs are an ideal way for small and mid-sized manufacturers in these industries, or serving these industries, to learn more about emerging technologies of potential value to themselves and their customers.

## Plus immediate benefits today

Complementing the long-term focus on the Industries of the Future process, OIT offers BestPractices, a suite of resources for manufacturers seeking immediate cost-saving opportunities. BestPractices provides detailed technical information and tools specific to optimizing the performance of major industrial systems, including motors and drives, steam, and compressed air. It also offers a grant program for companies implementing innovative first-of-a-kind energy-saving technologies.

BestPractices resources include self-help tools for manufacturers not eligible for IAC assessments or preferring to conduct their own assessments:

- ***The Self-Assessment Workbook for Small Manufacturers*** provides guidance on identifying energy-saving, waste-reducing, and productivity improvement opportunities, and on implementing selected projects.

## Who is eligible for IAC assessments?

- *Small and mid-sized manufacturing plants in Standard Industrial Classification Codes 20-39*
- *Located within 150 miles of a host campus*
- *Meeting the following criteria:*
  - *Gross annual sales below \$100 million*
  - *Fewer than 500 employees at the plant site*
  - *Annual utility bills more than \$100,000 and less than \$2 million*
  - *No in-house professional staff to perform the assessment*



- ***Modern Industrial Assessments*** provides technical training to consultants performing assessments for small to mid-sized manufacturing plants.
- The **OIT database** includes the results of more than 9,600 assessments and allows users to search, by plant type and size, for the most frequent recommendations. It also details actual implementation costs and payback periods for selected measures.

**For more information on any of these resources, see [www.oit.doe.gov/iac](http://www.oit.doe.gov/iac)**

### Reed Tool Company saves with better air strategy

By switching to a smaller air compressor and more efficient air nozzles, this manufacturer of oilfield rock drill bits saved more than \$120,000 a year in energy costs. Recommendations for more efficient lighting and other items saved an additional \$33,900.

- Energy-related recommendations – 6
- Total recommended cost savings – \$151,800/year
- Waste-related recommendations – 2
- Total recommended cost savings – \$12,300/year
- Total recommended savings – \$164,400/year
- Total implemented savings – \$154,300/year



**Industrial Assessment  
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