



# Industrial Energy Programs

**Consumers Energy**

*Count on Us®*

# Industrial Energy Program

The Industrial Energy Programs (IEP) Team can tailor offerings to the industrial systems and energy savings initiatives of your facility.

## Areas of Expertise Include:

- Compressed Air
- Energy Management
- Steam System Optimization
- Process Water Systems
- Refrigeration
- Other Process Equipment

Deliverables will be tailored to the wants and needs of your organization to assist you in identifying and realizing energy savings in your plant. These include:

- Facility walkthroughs
- ASHRAE Level I and Level II Plant Energy Audit
- System optimization assessments
- Energy management trainings and assistance
- Technical forums and industry tradeshow

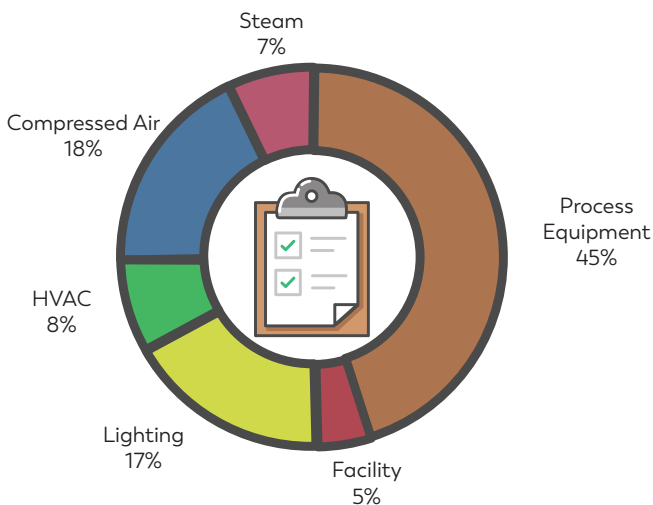
If your company produces, processes, assembles goods or has any industrial systems in your facility (i.e. Compressed Air, Steam, Process Water), our team can assist you in finding ways to reduce your energy use and save on operational costs.



### Benefits:

- Increased productivity
- Improved quality
- Increased safety
- Reduce operation and maintenance (O&M) cost

### Energy Audit Identified Cost Savings by Plant Systems



Data from DNV GL

The industrial sector accounts for about one third of the total energy use in the United States, the largest use of any single sector.<sup>1</sup> Our expertise can help make your company's process more energy efficient and experience savings that go straight to the bottom line.

1. U.S. Energy Information Administration



## Compressed Air

Operating compressed air systems can exceed 40 percent of a facility's electricity cost.<sup>1</sup> Engage the IEP Team to earn rebates on new equipment purchases, audit existing equipment and optimize your compressed air end uses.

Consumers Energy electric and/or natural gas customers are eligible to participate in this program.

### Eligible equipment incentives include:

- Air compressors
- Compressed air dryers
- Flow controllers
- Compressed air storage tanks
- Electric tools replacing pneumatic tools
- Zero loss condensate drains
- Compressed air waste heat recovery
- Compressed air system energy audits conducted by a contractor

Typical compressed air incentives can range from \$300 to over \$100,000 per facility.

Note: see current catalog for complete list of measures and qualifying requirements

1. John Henry Foster Company



**Benefits:**

- New VSD compressors produce less noise
- Recover wasted heat to use in the cold winter months
- Reduces downtime risk and improves air quality in the building

## Typical Annual Compressed Air Operating Cost

Compressor Size	1 Shift (2,250 Hours)	2 Shift (4,250 Hours)	3 Shift (8,400 Hours)
10 HP	\$1,720	\$3,250	\$6,430
15 HP	\$2,580	\$4,880	\$9,640
25 HP	\$4,300	\$8,130	\$16,060
50 HP	\$8,600	\$17,260	\$32,130
100 HP	\$17,120	\$32,330	\$63,900

\*Based on \$0.10/kWh

“...We had a dedicated program manager to facilitate the necessary compressed air upgrade purchases and rebate coordination with [Consumers Energy] personnel.”

**- Scott Smith, COO/CFO, LC Manufacturing**





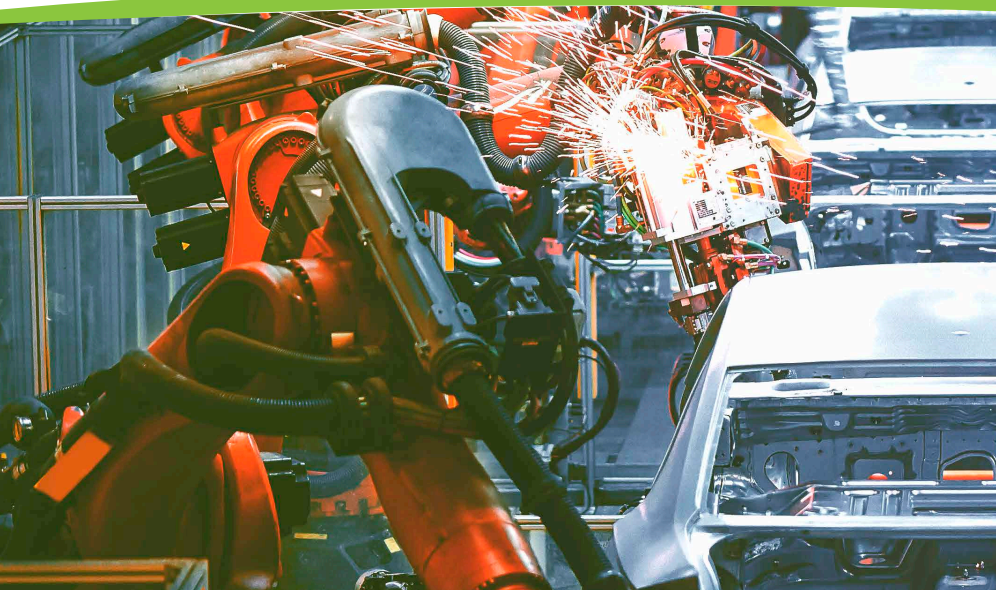
# Industrial Energy Management

Let's work together to bring energy efficiency into the very core of your business planning and practices.

This program is more than a one-time energy upgrade. We'll work with you to develop and implement an energy management system: a comprehensive and systematic approach to continuously improving the energy efficiency of your business.

## **Program technical assistance includes:**

- Technical forums hosted around the state
- Personalized Industrial Energy Management trainings for your plant's energy team
- Facility walkthroughs and ASHRAE Level I Audits
- Support in pursuing the ENGERY STAR® Challenge for Industry or ISO 50001 compliance
- In-depth ASHRAE Level II Plant Audits



The Industrial Energy Management program is geared toward larger Consumers Energy industrial customers. To qualify, your previous year's energy use must be at least 1,000 MWh of electricity or 30,000 Mcf of natural gas. If you're not sure whether you qualify, give us a call to verify.

Since the IEM Program started in 2013, plant energy audit reports have identified anywhere from 5 to 25 percent savings in total energy use.

An IEM Program participant, Ranir LLC, achieved the ENERGY STAR Challenge for Industry in 2017 by reducing their plant energy intensity metric by 16.4 percent in 2 years.

"We have done a lot of energy efficiency improvements, but we couldn't have done it without Consumers Energy's help through the IEM Program. This has been a motivating experience..."

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- Kevin Clark, Ranir LLC



# Steam System Optimization

Relieve the pressure of energy costs with the Steam System Optimization program from Consumers Energy. Optimizing your facility's system can save you over 15 percent in energy use. According to the U.S. Department of Energy, 15-30 percent of installed steam traps may have failed in a steam system that has not been maintained for 3 to 5 years.<sup>1</sup> There are several ways your facility can optimize your steam system, saving you energy and money while reducing carbon emissions.

Current Consumers Energy natural gas customers are eligible to participate in our program. Services include, but are not limited to:

- **Steam system assessments**
  - System review and engineering report
  - Specific project assessments
- **Steam trap audits and incentives**
  - Facility ultrasonic audit
  - Steam Trap training
  - Contractor network for fast replacement

Note: see current catalog for complete list of measures and qualifying requirements

1. U.S. Department of Energy





### **Benefits:**

Steam System Optimization and improvements can also benefit your business with:

- Energy efficiency improvements can reduce utility bills and improve your facility's bottom line
- Improved building temperature control
- Decreased maintenance and increased combustion efficiency when linkageless boiler controls are installed
- Reduced CO<sub>2</sub> emissions
- Steam traps operating at peak efficiency can reduce the need for additional boilers

### **Savings and Operation Efficacy**

- Typical natural gas energy savings is between 5 to 15 percent
- Steam trap maintenance has a typical pay back of less than one year



## Process Water System Optimization

Awareness that water and energy use are inextricably tied is growing. Energy is used to circulate water in industrial processes and to transport and treat our water and wastewater. The Process Water System Optimization Program serves to assist with identifying ways to reduce this energy use and connect our customers to energy efficiency rebates.

Current Consumers Energy customers are eligible to participate in the program. Savings tend to focus on pumps, aeration equipment and control systems. Services include, but are not limited to:

- Walk-through assessment and discussion with program staff to identify energy efficiency opportunities
- Support and guidance for establishing baseline energy use of specific equipment or system
- Applying for prescriptive and custom calculated rebates

Note: see current catalog for complete list of measures and qualifying requirements

### Benefits:

- Improved quality with increased operator control and precision
- Lower and control electrical demand costs by identifying what motors should run during non-peak times
- Motor speed control to smooth start-ups can result in less wear and tear on equipment, decreasing operating and maintenance costs
- Less energy use results in reduced CO<sub>2</sub> emissions



## Savings and Operation Efficacy<sup>1</sup>

- Optimizing system processes (savings of 5 to 20 percent+)
  - Modifying pumping and aeration operations
  - Implementing SCADA (Supervisory Control and Data Acquisition) systems to increase energy efficiency through variable speed control and process optimization
- Upgrading to more efficient equipment and right sizing
  - Equipment used beyond expected life operates below optimal efficiency
  - Embedded energy is lost in leaky pipes and lines, wasted water is wasted pumping energy

Proportion of Withdrawn Water (Surface and groundwater)	
Industrial Segments	Millions of Gallons/Day
Livestock	2,000
Domestic	3,600
Mining	5,320
Aquaculture	9,420
Industrial	16,000
Public Supply	42,000
Irrigation	115,000
Thermoelectric Cooling	160,000
Total	353,340

1. Electric Power Research Institute (EPRI)





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