

# Energy/Resource Efficiency for Industry



## Areas of Expertise

- Energy/Resource Efficiency Auditing & Engineering
- Environmental Process Engineering
- Chemical plant unit operations
- Waste Minimization
- Air Emissions Control
- Industrial Wastewater

## More Information

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## Key AECOM Attributes

- Integrated engineering and energy auditing
- Design, start-up and optimization of process plants
- Knowledge of plant unit operations
- Practical experience in industry

## Overview

Now, more than ever, plant operations must actively contribute to cost efficiencies that enhance market competitiveness. Manufacturing facilities have many opportunities to save on operating costs by minimizing the input of resources, the creation of waste and overall energy use. Plant energy and resource efficiency audits significantly differ from typical energy "check list" audits. Successful outcomes rely on identifying efficiencies related to fuel, steam, and power, in addition to select process changes to realize additional savings and sustainability goals.

## Our Approach

AECOM dedicates a seasoned engineering team to collaborate with clients, evaluating and prioritizing manufacturing process improvements to be consistent with management objectives. With integrated knowledge of the operational life-cycle, environmental process engineering and energy efficiency practices, we guide clients beyond "the way it's always been done" to implement creative solutions that minimize the environmental footprint, while maximizing year-over-year return-on-investment.

In this way, we achieve sustainable solutions and tailored process designs that exceed business objectives — increasing productivity, reducing energy use and achieving significant cost reductions.

AECOM's interdisciplinary engineers use a three step approach to develop energy use improvements with clients:

- **ASSESSMENT/PROFILE DEVELOPMENT.** Establish overall facility baseline energy use patterns through energy use audits by unbiased, objective professionals
- **BENCHMARKING.** Compare facility energy use to industry norms and best practices



- **ALTERNATIVES DEVELOPMENT.** Identify innovative energy use reduction opportunities and synthesize secondary sustainability benefits such as GHG emissions, to minimize capital and operating cost impacts

Our approach has helped many industry clients achieve significant life-cycle savings with exceptional performance, reliability, and quality.

## Areas of Expertise

AECOM has a broad-based energy engineering capability and a full range of services to help industrial facilities reduce costs through optimized energy use, lowered process water intake, minimized waste generation, improved air emissions control and industrial wastewater treatment.

Our expertise includes energy efficiency auditing, environmental process engineering, and hands-on knowledge of many industrial processes. We have practical experience in industry, as well as knowledge of plant unit operations. AECOM engineers are also trained to identify and correct wasteful operating practices and equipment use patterns.

Our efficiency auditors and process engineers work with clients to evaluate and prioritize manufacturing process improvements. Applying interdisciplinary skills, we incorporate these improvements with energy use minimization efforts to achieve a cost-effective and reliable process design.

The depth and breadth of our design experience with industrial process plants and their energy needs allow AECOM to readily converse with plant operations and the corporate and facility engineering groups. Close communication between key client and AECOM team members enables the development of realistic and prioritized energy use improvement strategies.

AECOM helps many clients achieve significant savings by improving their process efficiencies:

### Specialty Chemical Manufacturer, Contaminant Elimination/Energy Use Reduction

- **VACUUM SYSTEM PROCESS CHANGE:** replaced multiple steam-jet ejectors with liquid-ring vacuum pump
- **SAVINGS:** \$350,000/yr in steam cost, \$100,000/yr in recovered solvent costs, \$50,000/yr in wastewater treatment surcharges

### Resins Plant, Fuel Use Reduction/Environmental Compliance

- **PROCESS MODIFICATION:** combust reactor off gases in fired process heater rather than stand-alone thermal oxidizer
- **SAVINGS:** \$300,000/yr in oxidizer supplemental fuel costs