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SEE Action
STATE & LOCAL ENERGY EFFICIENCY ACTION NETWORK

Saving Energy in Industrial Companies: Case Studies of Energy Efficiency Programs in Large U.S. Industrial Corporations and the Role of Ratepayer-Funded Support

Why Energy Efficiency Is Important to Large Manufacturers

Energy can be one of the largest variable costs that companies can actively reduce. Today, many large manufacturing companies in the United States have adopted some sort of internal energy efficiency (EE) program. The main reason is for cost reduction, although reputation concerns are gaining in prominence.

In the most energy-intensive companies, where energy costs are more than 10% of total costs, the cost-cutting rationale for pursuing energy efficiency is most important. However, the case for pursuing energy cost reduction is often still compelling when energy is a smaller percentage of total costs, as it may be easier to reduce than labor or raw material costs. The net financial benefits of such operating-cost-saving projects directly impact the bottom-line profitability of companies.

While the U.S. industrial sector has shown progress in energy efficiency, recent studies suggest that even greater levels of EE can be achieved. These studies suggest that the untapped potential for financially attractive EE improvements could further reduce total industrial energy consumption by 15% to 32%.

How to Use This Guide

This report examines primary factors that produce successful EE programs at large industrial companies. It also examines the role that ratepayer-funded EE programs can play in supporting energy efficiency at such companies. The report examines four large industrial companies with robust energy efficiency programs that have interacted with many different ratepayer-funded EE programs across a variety of states. The report:

- Defines three requirements for successful EE programs in large companies
- Provides suggestions for other companies based on the experience of the case study companies
- Examines how the case study companies view ratepayer-funded EE programs
- Provides considerations for ratepayer-funded program administrators on how participation in their offerings for large companies might be increased.

Key Points

- Energy efficiency remains a large, untapped potential opportunity for reducing variable costs in the U.S. manufacturing sector.
- Capturing financially attractive EE potential is not automatic; company staff must have the desire, allocated time and expertise, and access to financial resources to identify energy savings opportunities and design and implement solutions.
- Based on the experience of four leading U.S. industrial companies (J.R. Simplot, General Motors, General Mills, and Intel) this report details primary factors that led to successful energy efficiency programs in support of company goals.

Case Study Company Energy Efficiency Targets and Achievements to Date

Company	Annual Revenue	Employees	EE Target	EE Achieved to Date
J.R. Simplot	$6 billion	10,000	20% reduction in energy intensity 2008-2019	8% reduction by 2014
General Motors	$152.4 billion	209,000	20% reduction in energy intensity 2010-2020	11.3% reduction by 2014
General Mills	$17.6 billion	39,000	20% reduction in energy intensity 2005-2015	10% reduction by 2014
Intel	$55.4 billion	106,700	4 billion kWh of cumulative reductions 2012-2020	1.6 billion cumulative kWh 2012-2015

Case Study Companies

Although they already have achieved strong results from their own EE programs, each of the case study companies has plans to further capture cost-effective EE potential that has not yet been realized.

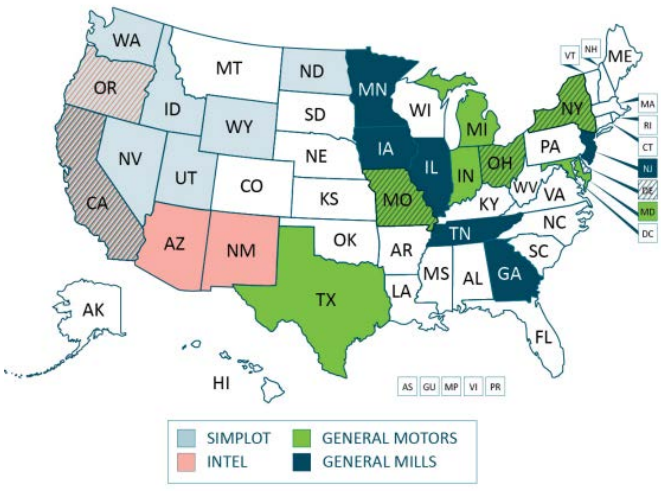
J.R. Simplot is the largest producer of frozen french fries in North America and the primary supplier of french fries to fast food restaurants such as McDonald's. The company has emphasized vertical integration, including phosphate mining, fertilizer production, agribusiness, and food processing industries. Energy is a relatively small (<2%) cost across all of Simplot, although it is one of the largest costs at some of their facilities.

General Motors is the second-largest automobile manufacturer in the world, owning brands such as Chevrolet, Cadillac, GMC, and Buick. GM has more than 30 manufacturing facilities in the United States. Energy makes up less than 1% of GM's total costs and their most energy-intensive process is painting, which accounts for approximately 50% of their automobile manufacturing energy use.

General Mills is one of the largest grain and cereal processors in North America, owning brands such as Cheerios and Pillsbury. The company produces cereal, yogurt, flour, and other food products. Energy makes up less than 2% of their costs at all of their facilities.

Intel is the largest semiconductor manufacturer in the world. It has manufacturing facilities and data centers. Energy makes up less than 1% of their costs, but it is their second-largest variable cost after labor.

Geographic Distribution of Company Facilities



Three Requirements for Successful Programs

Based on a review of the case study companies, three key requirements were identified for an industrial company's energy efficiency program to be successful.

- **Corporate commitment**. Senior management can signal clearly to plant managers and staff that improving EE is a corporate priority. This is best achieved by establishing clear EE-improvement targets and making plant management and staff accountable for achieving them.
- **"Boots on the ground."** Competent staff or outsourced experts must work at the facility-level to continually identify site-specific, profitable EE measures and follow through to implementation.
- **Efficient project processing systems**. Effective internal systems need to be in place to allocate financing for portfolios of EE measures deemed to be most attractive to the company.

How Large Industrials View Ratepayer Programs

Large industries generally view ratepayer-funded EE programs from a business proposition perspective, weighing the costs of paying into the programs against the programs' benefits to the company. Where any of the four case study companies paid into local ratepayer-funded EE programs, they made concerted efforts to gain as much from those programs as they could. They have been successful at that, gaining expert support and especially project incentives that allowed them to process more projects through internal hurdles than would otherwise have been possible.

Read the Full Report

http://seeaction.energy.gov/IEECaseStudies

About SEE Action

The State and Local Energy Efficiency Action Network (SEE Action) is a state- and local-led effort facilitated by the U.S. Department of Energy and the U.S. Environmental Protection Agency. SEE Action offers resources, discussion forums, and technical assistance to state and local decision makers as they provide low-cost, reliable energy to their communities through energy efficiency.

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