

Success Story

Stanley Black & Decker Industrial Energy Efficiency

Center for
Energy Efficiency &
Renewable Energy



at UMassAmherst

Stanley Black & Decker is a world-leading provider of tools and storage, commercial electronic security and engineered fastening systems. The company's New Britain, Connecticut facility employs 400 people in the manufacturing of tape measures and knife blades.

In discussions with utility company Eversource about how to improve the facility's energy efficiency, Facility Engineer Robert Bandzes learned about the Industrial Assessment Center (IAC) program. The company had already implemented some basic energy efficiency measures, and they were looking for assistance in identifying additional opportunities.

Sponsored by the U.S. Department of Energy, the IAC program provides free energy and resource use assessments of small to mid-sized industrial facilities. The New England region is served by the IAC at the University of Massachusetts Amherst, based in the Mechanical and Industrial Engineering Department's Center for Energy Efficiency and Renewable Energy. Assessments are conducted by engineering graduate students under the leadership of Professor Beka Kosanovic.

The UMass IAC conducted a comprehensive assessment of the Stanley Black & Decker facility in May 2014. The IAC team analyzed the facility's utility bills and then visited the site to meet with facility staff, learn about the manufacturing process and site operations, review all major energy-consuming equipment in the facility, and measure performance of specific equipment using metering and diagnostic tools.

The following month, the IAC provided a report with recommendations to improve the facility's energy efficiency, each explained in detail, including estimates for resource and cost savings and implementation costs.

Stanley Black & Decker staff have implemented four of the IAC recommendations to date, resulting in a reduced load on energy-intensive air compressors, improved operating efficiency for existing boilers and injection molding machines, and the selection of efficient models when replacing injection molding machines. In total, the estimated annual savings is \$28,900. Eversource provided approximately \$94,000 in incentives toward these projects, bringing the company's cost down to \$67,000. The savings will pay for this investment in slightly over 2 years.

The company is still considering some of the other IAC recommendations, including additional use of variable frequency drives and recovery of waste heat from the manufacturing process to provide space heating.

"This assessment was the first we had that looked in depth. They made a lot of good suggestions that we hadn't considered before."

- Robert Bandzes, Facility Engineer, Stanley Black & Decker



StanleyBlack&Decker

Recommendations implemented:

- Install variable frequency drives on injection molding machines to adjust motor speeds to meet loads
- Install a blower to dry products after washing, rather than using energy-intensive compressed air
- Insulate boiler condensate tank
- Select high-efficiency models when purchasing new injection molding machines

Benefits:

- Electricity savings: 338 MWh/year
- Demand reduction: 581 kW
- Natural gas savings: 124 MMBtu/year
- Emissions reductions: 111 tons CO₂, 140 pounds NO_x, 123 pounds SO₂/year

Annual cost savings:

- \$28,900

Implementation cost, after utility incentives:

- \$67,000

Simple payback period:

- 2.3 years

To learn more about the Industrial Assessment Center and find out if your facility is eligible for a free assessment, visit www.ceere.org/iac or contact IAC Director Beka Kosanovic at 413-545-0684 or kosanovic@umass.edu