

Energy Improvements lead to Productivity and Increased Profits

MJ Soffe, a Fayetteville clothing manufacturer, understands that efficient operations are imperative to remain competitive. Soffe distributes its products in retail and wholesale markets as well as directly to sports teams and athletic organizations around the country.

As demand for their products grew so did the need for an increase in production capacity. Soffe uses a constant supply of hot water to dye, set and wash its product. Workers often depleted hot water reserves and were forced to halt production while fresh water was heated in the dye machines with steam. This in turn led to increased costs for fuel and electricity as well as decreased productivity. Soffe's manager of maintenance, Adrian O'Quinn, discovered energy efficiency workshops hosted by [North Carolina State University's](#) Industrial Extension Service (IES) and thus began the company's journey to energy efficiency.

[IES](#) is the state-wide arm of NC State University's College of Engineering that partners with business and industry to transfer knowledge and technology that lowers costs, improves quality and shortens lead times, through programs such as energy assessments, ISO management systems, Six Sigma and lean. The IES staff consists of professional engineers that provide customized solutions for a variety of manufacturing and business platforms. For almost 20 years, The IES Energy Management Program has supported the comprehensive mission of the [North Carolina State Energy Office \(SEO\)](#), as a technical partner with energy assessments, detailed surveys and workshops.

After the initial assessment IES helped to develop solutions that not only **saved the company energy costs, but have led to significant increases in productivity.**

The energy improvements MJ Soffe implemented based on NC State's IES include:

- Installing a wastewater heat recovery system to decrease the use of steam for fresh water heating
- Implementing a steam trap maintenance program, installing a condensate return system, and decreasing system pressure to reduce steam system losses
- Improving air compressor efficiency
- Implementing occupancy based control and day-lighting in the lighting system for the new warehouse
- Establishing a motor purchase and replacement program

Benefits:

- Saved more than \$165,000 annually
- Increased throughput by 37%
- Reduced energy consumption per unit of production by 38%

Conclusion:

There is now sufficient hot water available without interruption. They increased productivity, saved on overtime and saw an improvement in product quality due to consistent temperatures for dyeing.