

CASE STUDY

Mr. John's Cleaners & Tailors, Everett, Massachusetts

Lessons Learned

Barbato implemented toxics use reduction and energy saving measures to improve his bottom line and to make his business more financially attractive to potential future buyers. He offers the following advice to other small business owners:

1) Take a comprehensive approach

Barbato looked for savings in every single aspect of the business to find cost saving measures – from small changes such as replacing light bulbs and adding pipe insulation to larger changes like switching from oil to gas. As a result, his expenses are down and quality is up. The environmental impact of the business is substantially improved and the business has established an enviable reputation for sustainability.

2) Thinking long-term can save money even in the short-term

Converting from oil to gas saved the business money right from the start even with the loan payments. Other efficiency measures, such as lighting upgrades and energy monitors, paid for themselves within a few months.

3) Persistence pays

In order to qualify for an energy audit, Barbato had to first install a gas meter and establish himself as a gas customer. By being persistent, he was able to arrange for a custom audit that corresponded to his building's particular circumstance as both a residential and commercial property. This persistence also paid off when he searched for a smaller, more fuel-efficient delivery van that would hold garment racks. After careful measuring and making physical changes to the racks, Barbato was able to make them work in the more efficient vehicles.

4) Quantify energy and resource use

To make informed decisions, Barbato started with a comprehensive analysis of utility and equipment usage and costs and carefully calculated the expected return on investment for new expenditures. For example, after careful evaluation, he chose to repurpose his older equipment rather than purchase new wet cleaning equipment.

5) Keep improving

Barbato and Mr. John's employees are constantly on the lookout for new ways to improve efficiency, save energy and reduce costs. Barbato is investigating heat reflecting window films which will improve comfort inside the shop while reducing the cost of air conditioning. The new boiler installation includes a robust maintenance schedule to prolong its life and optimize its efficiency. Solar panels – both for hot water and electricity generation – are in the future, too, as Barbato evaluates rebates and other incentives.

6) Let your customers know

Barbato recognizes that today's customers are increasingly drawn to "green" products, services and businesses. That means reduced use of toxics, greater energy efficiency and a greater sense of responsibility toward the overall community. In all these ways, Mr. John's has made great progress. Letting his customers know what he achieved through marketing efforts makes good business sense. Mr. John's has become "The Greener Cleaner," to the benefit of its customers, its community, and itself.

About the Toxics Use Reduction Institute

The Toxics Use Reduction Institute (TURI) at the University of Massachusetts Lowell provides resources and tools to help Massachusetts businesses and communities make the Commonwealth a safer place to live and work. Established by the State's Toxics Use Reduction Act of 1989, TURI collaborates with businesses, community organizations and government agencies to reduce the use of toxic chemicals, protect public health and the environment and increase competitiveness of Massachusetts businesses. For more information, visit www.turi.org.

Contact information

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Small Dry Cleaning Business Saves Money, Reduces Toxics and Conserves Energy



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Dedicated Wet Cleaning Shows Conservation of Resources and Overall Cost Savings

Mr. John's Cleaners in Everett, Massachusetts has pursued an aggressive program to reduce its environmental impact — and has saved money in the process. Owner of Mr. John's Cleaners Ernie Barbato applied Toxics Use Reduction principles by:

- Quantifying his use of energy and other resources
- Identifying opportunities to reduce toxics
- Evaluating options to improve operational performance

He has completely eliminated the use of the toxic solvent perchloroethylene for his garment cleaning and uses professional wet cleaning technologies instead. He has also implemented many energy efficiency measures throughout his shop that have already paid off.

Barbato has spent \$150,000 on improvements, much of which was financed. The total monthly cost is \$2,500. However, he is saving \$3,000 per month, a net savings of \$500 per month. Once new equipment is paid off in five years, he expects to save an additional \$1,100 per month.

The improvements have also rewarded the business with increased customer loyalty and differentiation in the marketplace. Mr. John's has demonstrated unequivocally that taking steps to reduce environmental impact is achievable, affordable, and financially rewarding, even when done by a small business in a down economy. Here's how he did it:

Like many small local businesses, Mr. John's saw its business fall off substantially with the economic downturn in 2008. Production is about 40 percent lower today than during the peak before 2008. While most businesses in similar circumstances would halt any long-term purchases, Ernie Barbato began a concerted effort to find new equipment, supplies and processes that would save him money and increase efficiency. The biggest payoffs were in the area of energy conservation.

Replaced major equipment to eliminate toxics use

His first decision was to make major changes to the basic garment cleaning equipment by converting from traditional perchloroethylene (perc) cleaning to professional wet cleaning, which delivers outstanding cleaning results without toxic solvents. He acquired a residual moisture control dryer and pressing and tensioning machines specialized for wet cleaning. After study and experimentation, Barbato found that one piece of existing equipment — a computer-controlled shirt launderer — could be repurposed as a new wet cleaning machine, reducing the cost of conversion. Wet Cleaning saves on the cost of electricity, heat and even water. It also reduces the cost and time devoted to hazardous waste management and regulatory compliance.

Contacted utilities to conduct energy audits

He contacted local utilities to conduct an energy audit, which is offered free by Massachusetts electric and gas utilities under the MassSave program. The audits identified specific measures to save energy as well as tax breaks and other financial incentives to help implement the improvements.

Size of Mr. John's Facility

- Utilizes 2,100 square feet on main floor with an additional 1,500 square feet in the basement for racks, boiler and storage
- Earns 70% of revenue from wet cleaning and 30% from shirt laundering
- Wet cleans about 600 garments and launders about 1,800 shirts per week
- Retains 3 full-time and 3 part-time employees — the equivalent of about 4.5 full time employees

Switched from oil to gas

Ernie Barbato replaced the existing oil-fired boiler with a modern gas-fired unit after consulting other cleaners and analyzing available technologies and associated costs. He concluded that a sophisticated, high-end boiler system with a higher purchase price was the least expensive alternative in the long term. Simply upgrading to a more modern unit improved energy efficiency by 12 percent. Barbato chose a non-condensing 'turndown' boiler, which modulates steam output and the associated fuel use in proportion to demand, resulting in an additional 20 percent improvement in efficiency. These improvements along with a significant price advantage for natural gas at current rates, means that the cost to operate the boiler will be reduced by nearly 75 percent. In addition to the cost of the boiler, the new system required building modification, rigging, installation, and ancillary equipment. Even considering costs to finance these expenditures, the greater operating efficiencies of the new system more than compensate for the loan payments, returning about \$275 monthly to the monthly bottom line.

Replaced lighting with more efficient bulbs

The existing fluorescent lamps were replaced with T8 fluorescent tubes with electronic ballasts. This technology saves 40 percent compared to older fluorescents. Payback is usually less than 36 months.

Insulated pipes

Pipe insulation is inexpensive, saves energy, and makes the working space more comfortable. A cleaning supply vendor offered better-performing pipe insulation at a lower price than home improvement stores.

Replaced steam traps

Often overlooked, steam traps in steam lines can fail after only a few years of service, reducing overall steam system efficiency by as much as 50 percent.

Barbato replaced all 12 steam traps in the system with new, high-efficiency, long-life units made by Tunstall of Chicopee, Mass. At a cost of about \$180 each, payback is expected to be less than a year.



Upgraded compressed air equipment

Garment care facilities use a lot of compressed air for shaping and pressing clothes. Barbato bought new clothes tensioning machines that incorporate small air compressors that turn on only when needed, thus reducing the need for continuous, high-pressure air throughout the shop. He also purchased a new, higher-efficiency compressor and reduced the delivered pressure from 90 to 60 PSI.

Installed monitoring and control equipment

Barbato installed an energy monitor to display overall gas and electricity usage continuously. In addition, he uses an inexpensive hand-held spot temperature meter (available from industrial supply vendors) to pinpoint hot equipment, broken seals, faulty insulation, etc. These measures ensure that everyone in the shop is aware of energy use to develop habits of conservation and keep on top of maintenance to maximize efficiency. With the installation of a new space heating boiler, Barbato installed an Outdoor Reset/Continuous Circulation control, which regulates the amount of steam produced depending on outdoor temperature. He also installed a web-based performance monitor that enables staff to make real-time adjustments as needed.

Improved fuel economy for deliveries

Through redesign of vehicle clothes racks, Barbato was able to replace a large delivery van with a smaller vehicle that gets nearly 50 percent better gas mileage. Barbato has also taught his drivers hypermiling — doing things like braking and accelerating slowly and smoothly, and keeping tires properly inflated. They also installed ScanGauge vehicle computers that enable drivers to monitor their driving habits and improve mileage. It all adds up — Mr. John's reduced vehicle fuel use by 50 percent for the same number of deliveries, a cost savings of nearly \$15,000 per year.

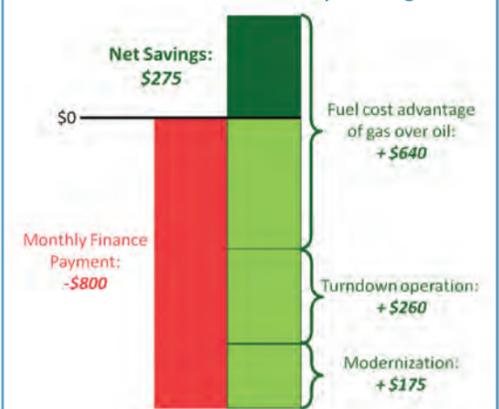
Connected 'green' efforts with marketing

Barbato is proud of his ongoing efforts to reduce its environmental footprint and believes that letting his customers know about his green efforts helps to differentiate Mr. John's from competitors. He commissioned a new logo that features a new tagline, "The Greener Cleaner."

"I wish I knew then what I know now."

— Ernie Barbato

New Gas Boiler Monthly Savings



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