BRIGHT Energy-Saving IDEAS

Cut Costs and Reduce Use for Long-Term Savings

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Water, electricity, fuel: these utilities power your business. How efficiently are you using them? Utility costs continue to rise with no end in sight. Why use more than you need? It can be very simple to reduce waste and, best of all, you can spend less on energy without lowering the quality of your work.

Cutting $1,000 off your yearly energy expenses is the same as bringing in $20,000 in sales at a 5% profit margin. Saving $1,000 a year can be simple—using the tips listed here. In fact, all the tips here can easily add up to a much more than $1,000 in savings. Each of the following ideas is free or requires a minimal investment that can pay for itself quickly.

> GREAT SAVINGS ON NATURAL GAS

When it comes to utilities, running the boiler is a cleaning plant's most expensive necessity. There are many ways to reduce the amount of gas it takes to get the job done, particularly when it comes to your boiler. In some cases, a tune-up can bring incredible savings. In other cases, a new boiler may be required to achieve maximum efficiency.

Insulation Installation

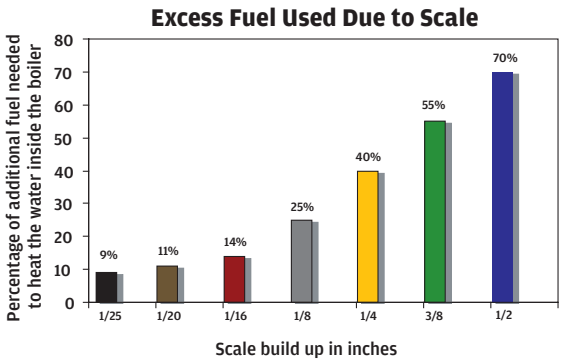
Insulating all hot pipes is the simplest and least expensive way to increase fuel efficiency and reduce the inside temperature of your plant. Make sure all lines leading from the boiler are insulated properly. Check that all insulation originally designed for your boiler is in place and has not deteriorated or been lost. Check that all steam headers and steam lines are insulated properly. The savings in fuel can be up to 17% and payback for the insulation will take only three to six months.

Stomping Steam Leaks

Leaks bleed pennies and won't fix themselves. They only get worse with time. Steam leaks should be repaired as quickly as possible. Many leaks form at the packing gland around valve stems. A fraction of a turn will stop the leak. Fittings and valves are other common leak sources.

Scale Back on Scale

Over time minerals and sludge build up inside the boiler making it less efficient. "If you let an eighth of an inch of hard carbonate scale build up on the inside, you're going to pay 16% more in fuel costs to heat through that scale," Mike Leeming, National Sales Manager for Parker Boiler in Los Angeles told *Fabricare*. "So if you're paying $400 a month in fuel costs and that bill suddenly jumps to $900 to $1,000, that's a good indicator that something went wrong." High stack temperatures are also good indicators that scale is forming in the boiler. Treat your boiler water and blow it down regularly to prevent scale build up and it will do its job more efficiently.



Coasting Down

Starting the boiler is usually the job of the first person in the plant, and the last person out usually shuts it down. Steam power remains after the boiler is turned off. Turning the boiler off before the production area ceases work for the day can leave enough steam for the remaining work and reduce gas usage. A few minutes a day adds up over a year's time. It costs nothing and brings immediate savings.

Begin with a little experimentation:

- Shut down the boiler five minutes earlier than usual and observe the effects on the plant, including water temperature in washers, steam pressure, and cycle time in drycleaning machines.
- If there are no problems, extend the time period a few more minutes. A 15-minute "coast down" probably won't affect most processes.
- When the maximum "coast down" time has been determined, establish daily procedures for shutting down the boiler early.

Trimming 15 minutes off the boiler's run time each day cuts out an hour and a half during a six-day work week. Over a year that comes out to about a half month of reduced boiler use. The same principle applies to start up. Too often a full head of steam is on line an hour or longer before processing begins. That's an unnecessary waste of fuel and money. Examine your startup times more closely to cut your fuel expenses even further without hampering production.

Why Worry About Energy Efficiency?

If you have a profit margin of five percent, saving $1,000 in utility costs is the same as generating $20,000 in sales!

Rich Exhaust=Poor Efficiency

Running the boiler at less than peak efficiency wastes fuel. Having the boiler checked can save a very large amount of money. John Patterson of Complete Cleaners in Trussville, Alabama, saved $395 a month after a few quick adjustments. "We discovered our boiler gas was running too rich. It cost us several hundred dollars a month until we figured it out," he said.

An outside company analyzed the boiler and instantly reduced the boiler's gas usage by 25%. "We had the boiler's gas pressure regulator replaced and had a burner tune-up performed with a device called a 'Bacarach,'" Patterson said. "It has a probe in the exhaust stack that analyzes exhaust gas and allows precise setting of the air-fuel mixture."

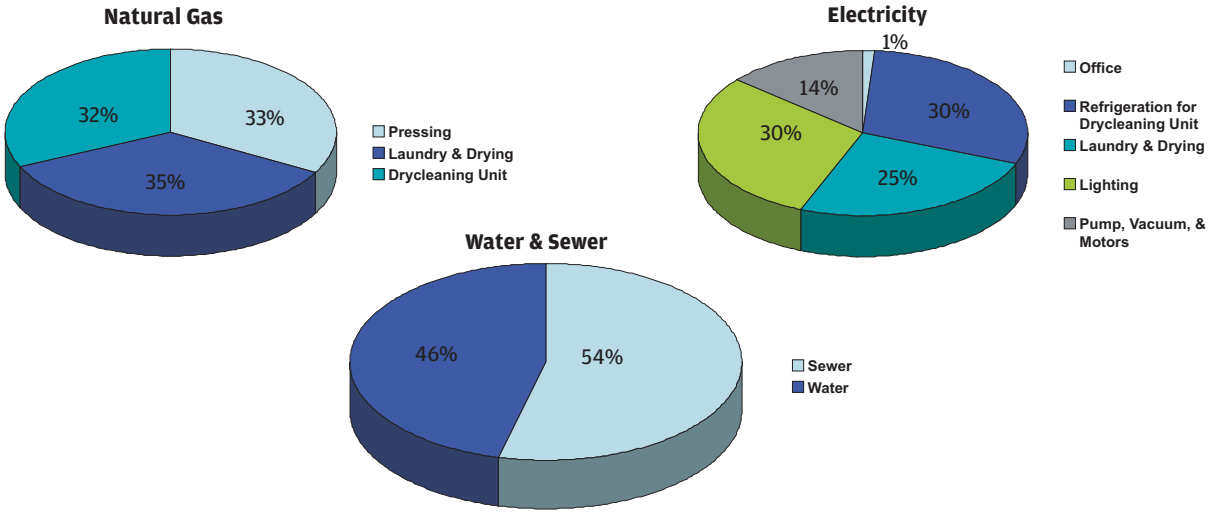
Patterson's service call cost $700, but the savings paid for the call in two months. His yearly savings totals $4,740, or $4,040 after the cost of the service. Results may not be as extreme for every cleaner, but it won't hurt to look into this type of tune up.

Keep Your Traps Shut

Faulty steam traps waste steam, causing an increase in burning natural gas. It takes only a short time to replace a steam trap, but the savings add up very quickly.

Former DLI Chairman Dan Martino saved 10% on fuel, heat, and steam by using a simple testing method to

Utility Usage by Equipment



replace his steam traps, shared with him by a representative from Armstrong Steam Traps. Start by removing the ⅜ inch plug and add a nipple and ball valve, checking to see if the steam comes out or not. If steam is coming out, that trap is passing steam and not trapping it properly. A ball valve costs about $4, and nipples are about 75 cents. Martino tested every trap in his plant. "In all we threw out 14 traps," he said. The savings he got from this simple tip adds up to quite a bit more than the cost of replacing the traps.

Even more information on boilers can be found in the January 2004 *Fabricare*.

SHOCKING SAVINGS ON ELECTRICITY

Reducing the amount of electricity you use is another easy way to save money in the plant. Beating demand surcharges by staggering the times when machines run is another way. Some areas charge less for energy at night and more during peak usage hours. Check with your utility provider to find out what the difference in costs is according to the hour of the day, and adjust your usage accordingly.

Reduced Use

Only you can determine what can be turned off in the plant. Some plants are able to run with fewer light bulbs. During the 2001 energy crisis in California supermarkets turned off half of their lights. In a cleaning plant, lighting can easily be replaced with more efficient methods.

Turning off lights when rooms are not in use is an easy way to cut costs. Another is to not leave lights on all night. Light-up signs are not necessary during the day. It may be possible to slightly downscale security lighting as well.

Cleaning Chiller Coils

It can cost about $130 to have your chiller tuned and coils cleaned properly. After this tune-up your chiller should run at a 10% higher efficiency rating, cutting down on your energy use.

Ending Demand Surcharges

Energy companies measure energy usage for a month and then determine your average load. Let's say a company used 72,000 KWH of energy in a given month. At an average of 720 hours per month, the company's usage comes to 100KW. However, energy usage is not "flat." Businesses start up and shut down every day, so peaks and valleys appear on the monthly meter reading. As certain equipment comes on it increases the demand. If all your machines run at the same time, a spike in demand results.

The utility company converts these spikes to demand charges. Using the 100KW per hour example, it would not be uncommon for demand charges between 200KW and 300KW to appear on the bill. At a hypothetical rate of $8.29 per kilowatt, the demand rate would be (250-100) x $8.29=$1,243.50. That's a lot of extra money you don't need to spend.

One way to beat demand charges is to run certain machines while others are turned off. For example, turn off the air conditioning while the drycleaning machine is running, or only run one drycleaning machine at a time. Special timers are available that will disable a machine until the timer allows it to run. Monitor your electric bills to see if your technique is working.

**Parts of this segment refer to Power Management Techniques (White Paper) by Eric Olson, CIM, published in 2004.*

TEMPERATURE CONTROL

Rick Kasperbauer keeps Kasperbauer Cleaners in Carroll, Iowa, warm in the winter with an innovative idea. "We installed an old screw-type air compressor instead of the newer piston kind," he said. "It throws off a lot of heat so we're able to capture that with ductwork to keep the plant warm in the winter time. It blows hot air into the plant and into an office where our seamstress works." Kasperbauer said he used to have to run the furnace in the winter, but the addition of this new system allows him to leave it off.

In the summer the heat is directed outside. "We have an air conditioned plant, so we installed a louver to exhaust the heat outside in the warmer months," he said.

Fifteen Steamy Super Savers

1. **Insulate pipes** and hot water storage tanks.
2. **Check for steam leaks** throughout the plant. Repair leaky valves.
3. **Check your traps**. Replace the ones that aren't working or are blowing through.
4. **Turn off your equipment.** If each piece of equipment does not have its own valve, install valves as needed. Make sure the valves are not leaking steam into unused equipment.
5. **Check timers and controls** for correct operation. Don't over steam, over blow, or over dry.
6. **Check hot head press** condition. Keep clean and bright for best heat transfer.
7. **Check tumblers** for adequate piping and ducting.
8. **Check timers** and/or timing of drying and conditioning loads.
9. **Check lint traps** for free air flows.
10. **Check steam coils** for lint buildup and clean as required.
11. **Check pressure** of gas and combustion on gas-fired tumblers.
12. **Check ironers** for pressure removal during periods of inactivity and make sure motors are turned off.
13. **Turn off vents** in canopy when not using ironer.
14. **Check that proper speeds are set** on the ironer for the workload.
15. **Check padding, covers, aprons**, and mechanical condition for maximum production.

> WATER

Conservation through Recycling

Kasperbauer also runs an industrial laundry and has been looking into ways to reduce the amount of energy it takes to heat the water for cleaning. "There is a pit behind the washers where the water is collected and there's a way to warm up the water before it is used, but we haven't installed a system for that yet. We've been looking into it, though," he said.

Heating Things Up

See this month's *Journal of Drycleaning & Laundry Institute* for a special bulletin on saving money on heating water in your plant.

> PENNIES MAKE DOLLARS

Energy costs are a controllable and manageable budget item. The investments you make to decrease energy use are "inflation proof." As the price of energy continues to rise, your savings will increase. Plants of any size can take advantage of any or all of the tips suggested here. The sooner these measures are implemented, the sooner the savings begin to add up.

Speaking the Language of Boilers

Here are some common terms used when discussing boilers.

BTU (British Thermal Unit)—The amount of heat needed to raise one pound of water at maximum density though one degree Fahrenheit. A wooden kitchen match burned completely produces about one BTU.

Horsepower—The power of a boiler's output, equivalent to approximately 33,470 BTU per hour.

Energy Efficiency Rating—the ratio between the boiler's output and the energy it takes to produce that output in BTUs. For example, a 10 horsepower boiler with an input of 420,000 BTU and output of 336,000 BTU has an energy efficiency rating of 80%. (336,000 divided by 420,000=.80 or 80%)

Source: Clean Profits for Drycleaners, 2000 Southern California Gas Company

State Programs Cut Costs

Some energy-saving solutions can be had for FREE. There are several federal programs designed to promote efficiency in businesses, and many states also have programs in place. The Database of State Incentives for Renewables & Efficiency (www.dsireusa.org) offers a complete view of various programs by state. Check your state to see what grants, tax rebates or other incentives are accessible to you.

Dave Suber's Perfect Cleaners in Los Angeles took advantage of the program offered in California. Perfect Cleaners now uses 10% less gas thanks to California's energy program. "I've been watching my gas bill and it's still going up, but our usage is down, so imagine what it would be if we hadn't used the program," he said. "The state has a program and we signed up for it through United Fabricare. This year they had an insulation program and they insulated all of our pipes for free." Suber also took advantage of a since-discontinued program that enabled him to replace every steam trap in the plant for free.

"Most cleaners can save a lot of money on energy," said Mike Fahar, Vice President and General Manager of United Fabricare Supply Inc. in Los Angeles. United Fabricare Supply got involved helping cleaners take advantage of the Southern California Gas Company's Express Efficiency Program and a similar program through Pacific Gas & Electric.

"The utility collects money from all of their customers by raising their gas bills. This money is then put into a fund which is used to find ways to foster conservation," Fahar said. "We go to a plant and tell our customers about the program and get them to sign up. Then we get a contractor to replace the piping insulation. We charge only for the tax and we use the rebate money to cover the contractor's expenses."