

Choosing to Be Green

Could the Voluntary Retrofitter Actually See Any Real Return on his Investment Besides a Clearer Conscience?

By Ben Baeder

Last November in Georgia, Gov. Sonny Perdue publicly bowed his head and prayed for God to end a drought.

But down here on terra firma, many of us regular folks are not doing all we can to save water and energy. The cause may be that homeowners, many of whom would love to do their part for the environment by “going green” and installing water-efficient appliances, wonder if changing out old appliances would ever pay off.

For such families, there is good news. Not only would installing efficient appliances help reduce your impact on the environment, but research indicates it would in some cases be “green-friendly” for the pocketbook, too.

“There are definitely easy ways to save money,” said Bob Markovich, home and yard editor for Consumer Reports Magazine. “And many things families can do are not about money, they are about reducing your carbon footprint and doing the right thing.”

Most of the ideas discussed here will be about saving water. In addition, some easy ways to save energy will be discussed briefly at the end.

Before getting too far into this article, it should be noted that water costs vary in different parts of the country.

Most water agencies seem to measure water in units of 100 cubic feet of water, called a CCF, which is about 748 gallons. In Chicago, a CCF is about \$1, according to city publications. In Tucson, the water rate is on a sliding scale, and most



families pay between \$1-\$4 a CCF. In Gov. Perdue’s Georgia, in the city of Atlanta, which also charges on a sliding scale, most families pay about \$3 per CCF, according to city statistics.

So, for this article, assume the majority of us pay \$1 to \$3 per CCF, though it should also be noted that as water becomes more scarce, these prices will likely escalate in the years ahead.

All statistics are for a family of four. Regardless of region, there is money to be saved by installing efficient appliances in the home.

The Replacements

For most of us, the day starts in the bathroom — an activity that typically concludes with a swooshing sound. U.S. law requires retailers to sell toilets that use less than 1.6 gallons per flush (gpf). But toilets using less than 1.28 gpf are increasingly becoming available.

A person flushes about five times a day, according to the federal government. Over the course of a year, a family using a 1.28-gpf toilet flushes down 2,336 gallons less than a family with a 1.6 gpf toilet, which comes to an annual savings of \$3-\$9.

For a \$150 toilet, it would take 17-50 years for the investment to pay off. But many water-starved counties, such as Santa Clara County in California or Miami-Dade County in Florida, offer tax rebates of \$50 to \$150 to families that install efficient toilets, which makes the purchase go down a little easier. And not every toilet out there uses 1.6 gpf. Many homes still have toilets that use 3 or even 5 gpf. In those cases, replacing the toilet could save \$30 to \$100 a year.

And if you’re a Californian, you are going to end up with a high efficiency toilet anyway, because legislation recently passed that outlaws by 2014 the sale of any toilet using more than 1.28 gpf.

Next, the typical family member jumps in the shower, which ordinarily uses about 3.2 gallons per minute, according to information from Kane County, Ill. If a person is willing to put up with those showerheads that seem to tease us with just the tiniest mist, there can be a steady stream of savings.

Low-flow showerheads squeeze out as little as 1.2 gallons per minute, and the cheap ones only cost about \$15. If every member of a four-person family daily takes a 10-minute shower, that’s an annual savings of \$40-\$120. Most readers are probably thinking, “My shower is one of my few luxuries in life, and I am not changing a thing about it.” But even the most shower-loving among us should consider giving a low-flow head a try. They are cheap, easy to install and are getting better customer reviews than ever. It is a very low-risk experiment.

After coming home from work, many families have to start a load of laundry. A standard washing machine uses about 41 gallons per load, according to the U.S. Environmental Protection Agency. And an efficient front-loading model can use as little as 10-15 gallons, according to manufacturers’ claims, which would save about 10,000 gallons and \$14-\$42 yearly. A good washing machine costs about \$700, so it would take 17-50 years for this one to pay off.

And finally, the dishes: An average dishwasher uses about 10 gallons per load, while a water-efficient model can use as little as six, according to the Massachusetts Water Resources Authority. Savings? About \$2-\$6 a year, which would make an efficient model pay itself off in 67-200 years, not too shabby, for a giant tortoise. (They live to 175 years).

So, let’s recap our savings over a 10-year period:

Item	Cost	Savings
HET Toilet	\$150	\$30-\$90
Shower head	\$15	\$400-\$1200
Washer	\$700	\$140-\$420
Dishwasher	\$400	\$20-\$60
Total	\$1,265	\$590-\$1,770

Counties, water districts and utility companies all over the country offer rebates for almost every kind of water-or-energy-conserving appliance. In some areas, the rebate programs are so aggressive they can cut the cost of an appliance by 70 percent. So, before making up your mind on any major appliance, those doing green retrofits should check for such programs.

Don’t Forget About the Lawn

Families in most parts of the country can at least break even on their water bills within 10 years of buying their appliances. But that doesn’t even take into consideration the water and expense saved by installing efficient irrigation systems, which account for about half of water use in some western states, according to experts.

Drip irrigation systems use 20- to 50-percent less water than sprinklers, according to the U.S. Environmental Protection Agency. Other water agencies advise customers to avoid any type of sprinkler that makes a mist, because much of the water is blown away by the wind.

Switching to a drip or soaker-hose irrigation system could save a family about \$3-\$9 a month, which represents a savings of \$360-\$1,080 over 10 years. This switch is definitely worth it.

Experts also say most lawns only need watering twice a week. And, finally, do not scrimp on your irrigation timer. Getting a good one that is highly customizable and easy to use will pay off in no time, according to water officials.

The Debate Heats Up

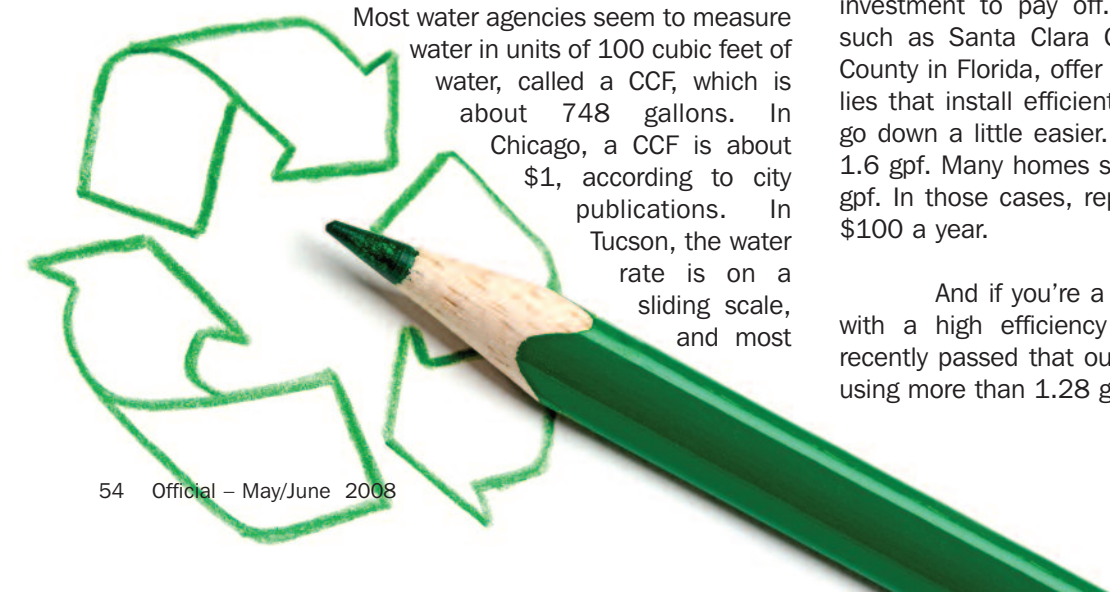
No article about conservation would be complete without mention of one of the biggest trends in home appliances: tankless water heaters. The selling point on tankless water heaters is that they instantly provide unlimited hot water. And they are supposed to be about 33 percent more efficient than conventional water heaters because they do not have to constantly keep hot a large amount of water.

But the federal government and consumer-watchdog groups caution that these devices are no messiahs and work better for different homes and different climates.

“Because they rely on the furnace or boiler to heat the water directly, tankless coil water heaters work most efficiently during cold months when the heating system is used regularly,” cautions the U.S. Department of Energy. “That’s why they can be an inefficient choice for many homes, especially for those in warmer climates.”

But manufacturers claim a family can save money as long as they use the same amount of water they did with their conventional water heater. A family that spent \$331 heating water in their conventional natural-gas water heater would spend about \$222 with a tankless water heater, according to Lisa Nagamoto, a spokeswoman for Noritz Tankless Water Heaters in Orange County, Calif.

She said a tankless water heater would save even more money for a family that installed other water-efficient



appliances. So this change may be worth it, but not for all people at all times, according to experts. Consumer Reports plans to write a story about tankless water heaters soon, Markovich said.

Other Changes

Over the years, *Consumer Reports* has done plenty of research on how to save money and be earth friendly, and there are many easy changes that can yield big savings.

First, change out incandescent light bulbs to florescent, which could save \$30 over the life of the bulb, according to Consumer Reports research. Next, buy a thermostat that is easy to use, Markovich said.

"There really is a difference," he said. "Some are hard to program and some are even cryptic. The more difficult they are to program, the more likely a person is to override the program, and then they lose all the efficiency." A well-programmed thermostat can cut energy bills by 20 percent, and a good one costs only about \$80, he said.

Another relatively inexpensive fix is to insulate your house better, which could pay off in just a few years, he said. Insulating pipes is also an easy way to save on water-heating costs, he said. And that hot water should come from a slightly expensive water heater, Markovich said.

"The more expensive ones with the longer warranties really are better," he said. "We literally sacrificed a bunch of them. We chopped them in half and examined them. The expensive ones were better."

There are also a few improvements that sometimes are said to pay off, but actually take a long time to yield savings. Replacing windows, although it can reduce heating and cooling bills, usually costs too much to yield much savings, he said. "If they are rotting or just super ugly, it is good to think about energy efficiency when considering replacements," Markovich said. The same thing goes with replacing a heating furnace, he said. It is probably better to maintain or upgrade a furnace with caulk and insulation than to buy a new one.

All For One...


One thing to remember when thinking about replacing appliances is that all of us are in this resource-saving game together, said Chris Brown, executive director of the California Urban Water Conservation Council. When millions of people all save a little water or energy, the need for new reservoirs, water-treatment facilities and power plants goes away, he said.

"Individually, people may not see the savings right away," Brown said. "But we all flush the toilet five times a day, so that little bit of water saved each time, it really adds up."

Can people really think unselfishly when it comes to the environment, though? Markovich said its already happening. The magazine last year put out a special section on saving energy, and it was one of the most popular sections in magazine history, he said.

"We never dreamed it would do that well," he said. The trick now is to try to sort out the marketing gimmicks from the real thing, he added. He said a person who uses magazines, Websites and other resources to be a smart shopper can do well financially while doing the right thing for the environment.

"You have to go out there with your eyes wide open," he said. "But there are some great products available."

Down in Atlanta, Perdue's prayers were answered, sort of. A wet December ensured that 2007 would not be the state's driest year ever, according to an Associated Press story. But the rest might be up to us. 

Here is a sampling of links to some rebate programs.

<http://www.annapoliswd.org/pdf/RebateApplication.pdf>

<http://www.irwd.com/Conservation/rebates.php?a=res>

<http://www.marinwater.org/>



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