JANUARY: GET OUT OF HOT WATER

ANNUAL SAVINGS: UP TO $112, 2.1% OF ENERGY FOOTPRINT

Heating water accounts for almost one fifth of a typical household's direct energy use. This month, hop over to a home improvement store to save with four simple actions. Then, if you own your water heater, use the info on the next page to plan how you'll replace it when it dies. New water heaters can use just half the energy of old ones. Prepare now: when a water heater fails (BRRRR!), you'll want to replace it quickly!

FOUR SIMPLE ACTIONS NOW

Install low-flow showerheads & faucet aerators. It's easy and this short video shows you how: www.youtube.com/watch?v=i-qhpkTEfbA. These simple devices reduce hot water use in showers and sinks by about 30%. Starting at a cost of roughly $10, a showerhead pays for itself in about a year. Aerators cost a few dollars and pay for themselves in savings in months.

Insulate your hot water pipes. It will save energy, money and the time you currently wait for the water to run hot - and it's easy. See how here: www.youtube.com/watch?v=XxbtIKW2-wU

Not so hot! Set the temperature on your water heater to 120 (or the triangle  setting). When you're headed out of town, turn it to off (or to "vacation"). If your electric heater has no switch, turn it off at the breaker box. For a gas heater, follow the instructions on the heater itself.

Keep 'em short. Keep your showers to five minutes and you'll use just half the hot water of a bath. To relax, treat yourself to an occasional bath or longer shower. When soaping up and shampooing, turn the water off.

P.S. Conserving water, hot or cold, saves money and the energy used to pump it to a treatment plant, make it drinkable, and get it to us. Nearly half of household water goes for lawns (29%) and toilets (19%). The web has lots of advice for using less water for each. Above all, installing a low-flow toilet is easy, reduces toilet water use by 20% to 60%, and pays for itself in a few years.

☑ ACTIONS	% Energy Footprint	Est. Annual Savings
❑ Reduce showers to five minutes or less	1.1%	$59
❑ Install low-flows, insulate pipes, lower water heater temperature	1.0%	$53
When replacing your water heater, switch from:		
❑ a standard gas to a hybrid electric OR	4.8%	$110
❑ a standard electric to a hybrid electric	missing #	$220
POTENTIAL ANNUAL SAVINGS	2.1%	$112

Notes: Assumes 3-person household. Water heater switches: 10 years annualized.

PREPARE NOW: WHAT NEXT? *When your water heater fails*, ***icy showers*** will drive you to act quickly. To ensure you choose wisely, plan for this **now:** What type will you buy? From where? If you'll switch from gas to electric, have an electrician run the new line now. The table below summarizes the options:

Hybrid Electric (aka a Heat Pump Water Heater): Extremely efficient, a hybrid electric uses less than a third the energy used by a standard electric and even less compared to a standard gas heater. Although more costly up front, it pays for itself in under four years. Within ten years, it will save $1000, compared to a standard gas, or $2000, compared to a standard electric. It does this by extracting heat from the air around it down to 37° F. If the air around it is colder, it switches to electric resistance heat. *A hybrid electric must be housed in a room at least seven feet high of at least 700 cubic feet*. In a cold climate, it should be installed in an unheated space – an attic or basement - so it doesn't steal heat from the rest of the home. In a warm climate, installing it in the house proper will reduce the need for air conditioning. In either case, it dehumidifies, which can save energy and money.

Other Tanks Compared: Standard Electric versus Energy Star Gas: An electric uses less energy, is cheaper up front and is safer. Even so, because gas costs so little, the electric will cost about $130 more per year than the gas. *However*, if switching to an electric makes your house all-electric, the electric will end your gas connection fees, *saving* you roughly $9 a month, $1200 over ten years, and lots of energy.

Gas Tanks Compared: An Energy Star (high-efficiency) gas tank uses a little less energy than a standard one, costs a little more up front and costs a little less day-to-day. In the table below, the Energy Star recoups its higher up-front cost with savings in four years and saves nearly $200 over its lifetime.

A Gas Tankless Compared to a Gas Tank. A tankless uses less energy but costs more up front, emits more methane, breaks down more, promotes water waste, and costs more to repair. It's a good fit where space is tight and where there's little need for hot water. But recouping the extra up-front cost is slow.

IN MOST CASES, if space and funds permit, get a hybrid electric. You'll save a mountain of energy & money.

COMPARING COSTS, SAVINGS & ENERGY USE	Gas Tank Standard	Gas Tank Energy Star	Gas Tankless Energy Star	Electric Tank Standard	Hybrid Electric (Energy Star)
Purchase price	$632	$737	$939	$609	$1349
Monthly operating cost	$25	$23	$19	$34	$9
Total 10-year cost	$3507	$3324	$3424	$4608	**$2389**
10-year savings		$183	$214		**$2219**
Payback period		3.9 years	7.3 years		**2.4 years**
Energy factor	.62	.68	.96	.95	**3.75**

Notes: Table concept: michaelbluejay.com/electricity/waterheaters.html. Prices: lowest-cost 50-gallon tank and 9.5 GPM tankless models at Lowes and Home Depot, 2/9/21. UEF and operating costs: EnergyGuide labels. A high UEF is more efficient. Assumes: $.12 per kWh, $1.09 per therm, household of four. Savings and payback periods are relative to the standard models.

P.S. Why no tankless electric or solar? The former use more energy and cost more than hybrid electrics, have repair issues and require a costly electrical upgrade. In fact, utility companies may soon charge for the burden these heaters impose on the grid. In the U.S., **solar water heaters** cost more than installing a hybrid electric and solar panels that generate as much energy. In most U.S. climates, you need a backup heater to supplement a solar one.

Sources

www.greenbuildingadvisor.com, www.energystar.gov, www.epa.gov, www.consumerreports.org

"Water heater energy use… and how to save on it", michaelbluejay.com/electricity/waterheaters.html

References are available upon request from CreationCarePartners@gmail.com. This info sheet employs the Task of the Month concept developed by Dr. Stephanie Kimball for Earth Care, an affiliate of Hoosier Interfaith Power & Light.