

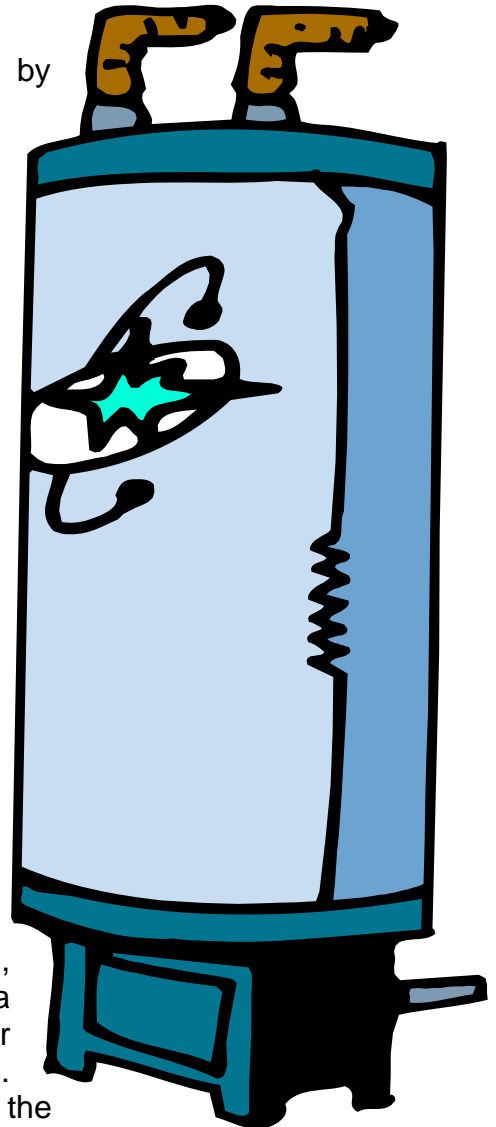
## ↓ Kilowatt Countdown .....Water Heating Checklist

*In households, heating water is the second highest energy use after space heating, at 20% (Hydro One) and can produce an average of two tons of green house gas emissions annually. The biggest opportunity for savings is simply to use less hot water.*

- Take 5 minute showers instead of baths.
- Install efficient, low-flow showerheads. Typically, showers account for up to 40% of hot water usage. A low-flow showerhead can reduce water consumption as much as 50% (Bullfrog Power).
- Use flow control on showerheads to give lowest flow that is effective.
- When showering, turn off water between soaping and rinsing. Some low-flow showerheads have a valve to turn off water and turn it back on instantly without having to readjust temperature.
- Shower with a friend.
- Don't shave in the shower; use the sink.
- For washing or shaving, run water only as needed, or partially fill basin with warm water.
- Repair leaky faucets by installing new washers.
- Inexpensive faucet aerators maximize water efficiency by regulating maximum flow rate.
- If having a bath, use ¼ tub of water. In winter consider letting bath water stand in tub until it has released its heat into house (**in households without small children or young visitors**).

### Water heaters

- Have a qualified technician lower thermostat on water heater. Adjust to provide warmth enough for a shower without adding cold water, typically 49°C or even 46°C (120°F -115°F). Dishwashers without booster heaters may require water temperatures of around 54°C (130°F).
- Some newer water heaters have a "vacation" setting to save energy when away for more than a few days. Turn thermostat "down" or "off" when away for more than three days.
- Drain a pint or so from water heaters a few times a year to reduce sediment and increase efficiency. Consult with your water heater manufacturer for recommendations.
- Most newer water heaters are well-insulated, but older models can be wrapped in a special CSA approved blanket to reduce energy use. Ensure a high R-value of at least R-24. Be careful not to cover heater's top, bottom, thermostat, or burner compartment. Don't put a jacket on a model where manufacturer says not to. Don't cover thermostat or restrict air inlets on gas or oil-fired models. Check with building supply dealer for insulation for the particular tank.



- Consider a drain-water (or greywater) heat recovery system. It will capture energy from hot water going down drain to preheat cold water entering water heater.
- Consider installing a heat trap on tank to prevent convective heat losses through inlet and outlet pipes. Heat traps allow water to flow into water heater tank, but prevent unwanted hot-water flow out of tank.
- If water heater is more than 15 years old, consider replacing it with a new, energy efficient model.
- When purchasing new, the smaller the water heater tank, the more efficient it is.
- Install tank in a relatively warm area. Unheated basements leach heat off water heaters.
- When installing, place a piece of rigid insulation on floor under tank to help prevent heat loss, saving 4%–9% of tank's energy (*U.S. Department of Energy Efficiency and Renewable Energy*).

### **Insulating pipes**

- Insulate first 1.2 to 1.8 metres (four to six feet) of cold pipe where it enters tank. Heat from tank can often be conducted back up cold inlet pipe. If it feels hot or warm to touch, it should be insulated. Plastic pipes shouldn't be wrapped - the extra warmth might soften them.
- Consider insulating entire length of hot water pipes where pipes are located in a crawl space or attic.
- When building, pay special attention to reducing length of hot water pipes.

### **Tankless water heating**

- Consider a tankless water heater, this heats water on demand with a gas burner or electric element.
- Tankless heaters can also be adapted as heat boosters for a dishwasher or a solar water heater.
- Pick the right size based on peak demand, incoming water temperature, and desired outgoing water temperature. Tankless heaters last at least 20 years compared to 6 to 10 years for tanks.

### **Solar water heating**

- Consider retrofitting a solar domestic hot water system on the roof. The sun can provide about 55 per cent of domestic hot water heating, backed-up by an electric system. Reputable designers, suppliers and installers belong to the Canadian Solar Industry Association.

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