

Energy Conservation

Conserving energy in your household not only saves you money, it reduces fuel emissions created from coal, oil or gas consumption. The world faces environmental challenges unlike any in recent history, but with proper care and maintenance, we can offset some of that pollution ourselves. One way to reduce this pollution is by reducing energy use in our own homes. The problem is that most households are unaware of how quick and inexpensive it is to lower consumption, but with some education and helpful tips, you can reduce your electric bills and help reduce stress on our planet.



According to a 2009 study by EERE of the U.S. Department of Energy, a typical household consumes over 50% of its energy through three applications;

1. **Space Heating / Cooling**
2. **Water Heating**
3. **Lighting**

Every household is different, but by going in-depth into these fields, we can help reduce half of this consumption, which could return a 25% reduction of your total energy costs. That doesn't include additional improvements that can be made elsewhere around your home.

Space Heating / Cooling

Summers and winters create the greatest demand for energy, especially in Delaware where we experience both seasons within our moderate climate. The oppressive summer heat forces us to crank up the A/C, and those freezing winters steal the heat from our homes. But with a few easy steps and a little investment, you can prevent your thermostat from taking any more of your hard earned cash.

1. Start by checking your windows and doors for any leaks. **Caulking and weather-stripping*** these areas can help reduce wasted air from escaping and keeps your home more comfortable.



2. **Install shades, awnings, or sunscreens on your windows** to block the summer light and heat. During the winter, open shades on sunny days to help warm up your rooms.
3. Whenever you need to replace your existing windows, research the differences between single-paned and double-paned. You may find that **double-paned windows** insulate your house better, reduce noise, and reduce sun damage to your furniture.
4. **Installing storm windows** is another money and energy saver. One type of installation includes an inexpensive plastic sheet/film that you can place over an existing window panel, which helps dissipate heat.

5. **Adding additional insulation** to the ceilings, walls and floors of your home traps heat inside during the winter and keeps heat outside during the summer.
6. **Make use of ceiling fans** wherever they may be located in your house. Not only do they need little energy to operate, but they help circulate cold air in the room and require less energy from your A/C unit.

- **Use ventilating fans** in your kitchen, bath, and utility area prudently. In just one hour of use, they can pull out a houseful of unnecessary heat during the summer.



7. **Adjusting your thermostat** and saving a few degrees in the summer and winter can truly add up to greater savings all around. Set your thermostat as low as is comfortable in the winter and as high as is comfortable in the summer. Setting your air conditioner 5° higher will save you up to 20% on cooling costs.

- If you don't own one already, **invest in a programmable thermostat**. Unnecessary energy is consumed in a household if no one is there to enjoy it. Installing a programmable thermostat that will automatically adjust the temperature according to your schedule will pay for itself in less than a year.

8. When **purchasing a new air conditioner**, look for a high Seasonal Energy Efficiency Ratio (**SEER**). The current minimum is 13 SEER for central air conditioners. ENERGY STAR models are 14 SEER or more.

- Be sure your **air conditioner is fully charged with Freon** so it operates efficiently.



9. Ever heard of a **whole house fan**? The basic idea of this fan is to draw cool air into your home through the windows while forcing hot air out through your attic vents. This can only be operated during periods when it's cooler outside than inside, but if handled correctly, it can be another cost-effective way to cool down.

10. If you have enough capital, you can invest in green energy technology, such as a **geothermal heat pump**. By harnessing the heat generated in the earth, you can create a renewable heating and cooling source for your house, including water heating. And with a Municipal Green Energy Grant, based on availability, you may be eligible to save even more money towards its installation.

Water Heating

When we need to wash our dishes or ourselves, one thing is more important than anything else: hot water. Unfortunately, we generate hot water that is neither used nor necessary in the first place. When it comes to water heating, smart decisions can reduce the amount of hot water we require, and in turn, reduce our energy consumption.

1. Your dishwasher uses less water than washing dishes by hand. Be sure to **wash only full loads in a dishwasher** and use the shortest cycle that will get your dishes clean. Then let dishes air-dry to save even more.
2. Save some hot water by **taking a shorter shower**, and try to avoid taking as many baths as well. For those who just have to take a long shower to get going in the morning, install a low-flow shower head to save valuable hot water.
3. **Wash your clothes in cold or warm water**, unless otherwise specified. About 90% of the energy used in a clothes washer goes to water heating.
4. Run your major appliances such as washer, dryer, dishwasher and pool/spa motors during **non-peak electrical hours**, generally after 8 pm.
5. Each household has different demands on hot water, mostly based on how many people reside there. These tricks can help reduce the amount of hot water generated in your residence.
 - a. **Create the right comfort level of hot water.** Gradually turn down the temperature on the hot water heater until you just barely run out of hot water. Then, turn it back up just a notch for comfort.
 - b. **Insulate the hot water tank** to reduce heat loss and save energy.
 - c. **Clean or replace filters** on furnaces once a month or as needed. More efficiency equals less energy costs.
 - d. Set your water heater to the **vacation mode** when you're away from home for more than two days.
 - e. If you **drain a quart of water** from your hot water tank every few months, you can remove sediment that impedes heat transfer and lowers its efficiency.
6. When you need a new water heater, consider replacing your traditional heater with a **tank-less model** instead.
7. Check out the **geothermal heat pump** mentioned above for more information on its applications towards water heating.



8. **Solar water heaters** are another form of green energy technology that takes advantage of renewable resources. There are various forms of water heaters, but they mostly work the same way. A heating element with piping underneath is installed on your roof, water absorbs the heat from the sun, and then gets pumped back into your general water source. Municipal Green Energy Grants are also available for these installations wherever offered.

Lighting

Advances in technology continue to lower energy requirements in appliances, even lighting. Here are some bright ideas to cut costs in your house today.



1. Compare your standard incandescent light bulbs with **halogen and compact fluorescent (CFLs) light bulbs**. Halogen bulbs can reduce light consumption by 30% - 50% and improve lighting, and CFLs save up to 75% off lighting costs.
2. Inspect your lamps and make sure the **light bulb wattage matches the lamp**. Bulbs that don't match can waste electricity and burn out much faster.
3. **Motion sensor controls** are a quick fix for rooms that don't get much attention, such as the garage. Automatic sensors conserve the life of your lights and keep you hands-free and worry-free.

General Household

Here are some extra hints on saving energy, everything from electronics to outdoor electric consumption.

1. **Unplug electronics**, battery chargers and other equipment when not in use. Taken together, these small items can use as much power as your refrigerator.
2. **Replace older appliances**, like your refrigerator or dishwasher, with **Energy Star efficient models**.
3. Unplug or **recycle that spare refrigerator** in the garage if you don't really need it.
4. **Increase attic insulation**. If existing insulation level is R-19 or less, consider insulating your attic to at least R-30.
5. Operating swimming pool filters and cleaning sweeps efficiently. **Reduce the operating time of your pool filter** and automatic cleaning sweep to 4 - 5 hours, and only during off-peak time.

