

# POWER TIPS TO MAKE YOUR HOME MORE ENERGY EFFICIENT



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Your home accounts for your largest carbon footprint. Appliances, lights, and heating and cooling systems use massive amounts of energy, but there are other things in your home that make it less “green.” That drafty window or tattered old insulation is doing nothing for your power bill or the planet. In the past few years, homeowners have become more aware of their personal energy consumption. There is an abundance of DIY home efficiency projects that lower the cost of running your home. If you’ve got a few hours on the weekend and the desire to save some money on your next power bill, choose a few of the following home efficiency tips to make your house a little more environmentally friendly.

### Common Sense Tips

Much of what you can do to make your home more energy efficient is common sense. But we are all busy and sometimes forget about the simple things that prevent our houses from wasting energy. If you’re not too handy around the house but still want to cut back on your energy usage, here are some simple and inexpensive home efficiency tips that almost anyone can use to make their homes greener.

#### Lights and Small Appliances



- Turn off the lights. Say you have a light fixture in your kitchen with five traditional sixty Watt incandescent bulbs. You leave it on every day while you are at work for eight hours. Each day, you’re spending about a quarter to power this one light fixture. Over the course of a month, that’s costing you around \$7.00 extra on your power bill.
- Purchase a couple of lamp or holiday light timers. If you like a light on when you return home from work, have the timer set to turn on about a half hour before you arrive. These are also great for small appliances and for televisions.

- Prevent “vampire drain.” That rarely used treadmill might not be turned on, but if it is still plugged into the wall, it’s draining energy anyway. Take the extra couple of second to unplug electronics when they’re not in use. TVs and computers are major culprits of vampire drain.
- Power down computers when not in use. It may take a little extra effort to boot up the next day, but shutting down your computers will really save some energy.
- Replace all light bulbs with compact fluorescent ones. These new light bulbs use about 70% less energy and will last for around five years. They will be a little more expensive than standard bulbs but are an energy-efficient and environmentally-friendly replacement.
- Install motion detectors on your outdoor lighting. There’s no need to have your entire yard glowing all night. These devices turn the lights on for a specific amount of time if movement is detected, saving energy and increasing the safety of the outside of your home.

### Heating and Cooling



- Raise the thermostat. Your HVAC is probably your largest user of energy. Invest in a programmable thermostat and set it to 74–76 degrees in the summer and 68–70 degrees in the winter. A few degrees higher when it’s warm or lower when it’s cold will save even more energy as the system has to work less to maintain the inside temperature.
- Adjust the thermostat when you’re not at home. Turning up the A/C a few degrees or the heater down a couple of notches will prevent the use of extra energy to keep your home comfortable for nobody but the dog.

- Consider some alternatives to the air conditioner. Until about forty years ago, air conditioners were not common in homes. Opening windows in the morning and evening, using drapes during the hot mid-day hours, keeping cold drinks on hand, using a box fan, and wearing comfortable clothing are all old-fashioned alternatives to the A/C that will allow you to use no energy to cool your home.
- Have your furnace serviced once a year and change the filter regularly.
- If your home is equipped with a working fireplace or woodstove, consider using it in the winter to heat your home. A supply of firewood can be considerably cheaper than gas or electric energy in many places, especially in rural areas. Just remember to keep the damper shut when the fireplace or stove isn't in use to prevent loss of heat. Install glass doors on fireplaces to prevent cool air from escaping up your chimney in the summer. Also, have a professional inspect your fireplace for safety before using it to prevent fire hazards.
- Use ceiling fans. In the summer, the fan should spin counter-clockwise to blow a breeze downward. In the winter, it should spin clockwise to force the warm air that sits towards the ceiling down into the room. There should be a small switch located on the base of the fan that allows you to change its direction. If your home doesn't have ceiling fans, they are easy to install and will only set you back around forty dollars per fixture.
- Close blinds and install thermal drapes. Natural sunlight is a great way to save energy, but not if it is at the expense of your home's internal temperature. Closed blinds keep out hot summer sun and cool winter air. Even better, drapes with thermal liners are widely available in a variety of style and do an excellent job of keeping the outside temperature outside. They add an extra layer of insulation to your windows. Each panel will cost about fifteen dollars, but the added style and energy-efficiency is well worth it.
- Window tinting is another good option for improving the energy efficiency of your windows. Tinted windows reduce excess heat from the sun's rays and are an easy DIY project for homeowners. Window tinting film is available at most home improvement stores.
- Install screen doors to use in nice weather. In fall and spring, turn off the HVAC and keep exterior doors open. A simple screen door or easy-to-install door cover with a Velcro opening will keep bugs out while letting fresh air in.

- Alternately, install storm doors to the entryways of your home. Glass and aluminum storm doors add extra insulation in the form of a pocket of warm or cool air between the outside and interior of your home.
- Open windows at night. When it's still warm during the day but temps are dropping at night, turn off the A/C and open your bedroom windows. Just make sure that they have screens to prevent nighttime critters from intruding.
- Use an electric blanket. A double electric blanket uses only 100 kWh. Place one of these between your mattress and fitted sheet and you'll be warm and toasty all night without having to run the heater. Most have thermostats that allow you to adjust the temperature. They cost between fifty and one hundred dollars but will keep you warm for many winters to come.
- If you have hardwood or tile flooring, use rugs in the winter to make rooms warmer and keep toes from getting chilly. Rugs function as added insulation in cold weather.
- Keep doors closed to rooms that aren't in use like guest bedrooms or spare bathrooms.
- Boost your garage's energy-efficiency. Garages are rarely designed with energy-efficiency in mind. Keep garage doors closed in the winter to prevent cold air from working its way into your home. Add a "draft dodger" or strip of insulation at the bottom of the door that leads into your garage to prevent air exchange.

## Large Appliances



- Wash laundry in cold water. Hot water cycles are not necessary to clean normal day-to-day laundry. Use only for excessively soiled clothing.
- Use a clothes line. Even in cool weather, a clothes line will dry your laundry in four to five hours assuming that it doesn't rain. Get into the habit of hanging a load on the line before work and you'll have greener and better smelling clothes while saving money.
- Don't use the heat dryer function on your dishwasher. Using a dish towel to dry your clean dishes will make your dishwasher much more energy efficient.
- Allow your dishwasher to do the work. Modern dishwashers don't require you to pre-rinse dishes before running them through a cycle.
- Your oven is the largest consumer of energy in your kitchen. If you can prepare a recipe on the stove top, in the microwave, or in a slow-cooker, do so to save a little energy.
- Always use your oven's exhaust fan to remove heat from your kitchen, especially in the summer.
- Don't allow kids to open and close the refrigerator or freezer multiple times. Mom was right. It does waste energy.
- The kitchen is a prime area for vampire drain. Unplug small kitchen appliances like toaster, coffee makers, and stand mixers when not in use.

## Gadgets



In addition to common sense household habit changes that will lower your energy consumption, there are several gadgets that can make a positive impact on your home's carbon footprint.

- P3 International's [Kill A Watt](#) is a personal energy meter that measures electricity usage of any appliance in your home. Plug in items to the meter and it will display a measure of kilowatt per hour usage.
- The [Belkin Conserve Insight](#) is a similar product but this meter is equipped to tell you more about your home's carbon footprint as well as how much money you're spending to power your toaster oven. This device includes a measure of the CO<sub>2</sub> used to produce the electricity for each appliance you connect to it.
- The [Belkin Conserve Smart AV](#) is a power strip that automatically turns off power to all devices plugged in when the primary device is powered off. For example, plug in your TV as the primary device and cable box, DVR, DVD player, surround sound, and gaming system as secondary devices. When the TV is off, so are all the others with the touch of only one button.
- Another Belkin innovation, the [Conserve Valet](#), prevents "phantom charging" when devices like cell phones and mp3 players are left plugged in after receiving a full charge.
- Powerhouse Dynamic's [eMonitor Residential](#) is a web application that allows you to monitor each individual circuit in your home to determine where and when energy is being wasted.
- For some families, a budget billing option with your local electric company can make keeping up with your power bill a little easier. Energy consumption will be averaged every three or four months and the rate adjusted to reflect your usage.



## Energy Star Recommended DIY Home Efficiency Projects



The Energy Star Program is a government funded initiative to make United States homes more energy efficient. If you've shopped for large appliances lately, you may have noticed the blue Energy Star labels on models that use less electricity to run. In addition to denoting efficient appliances, Energy Star has an [online calculator](#) that allows you to access your home's "energy score." Also check out the [Energy Star Home Advisor](#) that recommends DIY projects personalized for your area. Here are a few do-it-yourself ideas you might consider putting on your to-do list:

- Seal leaks. First check around all doors and windows. Then look around less-obvious spaces like dryer vents, plumbing vents, and interior doors to un-regulated areas like basements and sunrooms. If you can see light or feel outside air, you need to seal the area. Use a simple caulking gun, spray foam insulation, or weather stripping. All of these materials are available at your local home improvement center.
- Tighten your home's attic. Maintaining an airtight attic is key to cutting energy costs. Insulate around all air ducts with spray foam. Make sure your attic hatch closes securely.
- Insulate your water heater. Some power companies will provide free electric water heater insulation kits, so check with them before heading to the hardware store.
- Change air filters regularly. It is recommended that you replace your filters every three to four months. If you have animals in the house, pet danger will clog filters in less time. A new filter every month or so will help your system work more efficiently.

- Have your HVAC or furnace serviced at least once per year. Spending around fifty dollars on a professional tune-up will help your system run with less energy and, even more important, make such an expensive appliance last longer.
- If one of your home appliances bites the dust, consider purchasing a brand new energy efficient model as a replacement. Models that boast the Energy Star symbol are designed to function on less energy than other models.
- If you live in a historic or older home, don't think that your energy must be inherently higher. These homes are often built sturdier and more energy efficient than newer homes and can be made greener with a few simple DIY projects. Check out the United States Environmental Protection Agency's [advice](#) for making older homes more energy efficient.
- Consider your landscaping. Well-placed trees and shrubs can help keep your home cooler in the summer. Visit the U.S. Department of Energy's Energy Saver Landscaping [webpage](#) for customized energy efficient suggestions based on your home's geographic location.

## Major Renovations



If you have the time and financial resources to make some major home renovations, it's wise to consider investing in features that will make your house more energy efficient. Whether you tackle these projects yourself or hire a contractor, plan ahead to ensure that the most environmentally friendly materials are used and that high standards of efficiency are maintained. Many of these projects conform to the [Residential Energy Efficient Property Credit](#) for United States taxpayers.

- Install new energy efficient roofing. Reflective metal roofing keeps your home's temperature controlled with less energy consumption than traditional shingle roofing. Energy Star also approves certain roofing products that maintain high levels of energy efficiency. Look for the blue label or ask your contractor to purchase these products. Use [this tool](#) to determine how much money you could save if you replace your old roof with a more efficient material. If your roof sustains damage in a storm, your homeowner's insurance may help cover the cost of replacing your roof. Check with your insurance agent for more information.
- Energy Star qualified windows can reduce your energy bill by 7-15%. This significant savings is caused by fewer drafts and a special coating that acts like sunscreen for the interior of your home. The special glaze also reduces fading of carpet, furniture, and drapes. This [chart](#) will estimate your annual savings after replacing your single or double paned windows based on your city of residence. When you consider replacing your windows with more energy efficient ones, don't forget skylights! These windows can be some of the biggest drainers of regulated air in your home.

- Replace your old water heater. There are several types of energy-efficient, Energy Star recommended water heaters on the market. Consider each to determine which would be the best energy efficient model for your home and family:
  - Gas condensing water heaters are relatively new and incorporate more heated surface area to heat water quicker with less energy. This type will save you around \$100.00 per year in energy costs.
  - Replacing your water heater with a heat pump can save around \$300.00 per year, virtually cutting the cost of providing your home with hot water in half.
  - Whole-home gas tankless water heaters will save you around \$100.00 per year on your gas bill by only heating water when it's needed. There's no tank like those on traditional models.
  - High-efficiency gas storage hot water heaters use traditional technology and incorporate a few changes to conserve energy like insulation and more efficient burners. These models produce a less significant yearly savings of only around \$30.00.
  - If you would like to delve into the world of solar energy, a solar hot water heater is a good place to begin. There are a few requirements though: your roof must receive direct sunlight from ten in the morning until four in the afternoon all year long, it must face southward, your roof must be sturdy enough to support the solar panels, or you must have a small section of unshaded land on which to mount the system. These water heaters require more up-front cost and more maintenance, but you'll spend virtually no money on heating your home's water once the system is installed.
- Install new insulation. Insulation products are measured in R-values. The higher the R-value, the more resistant a material is to heat flow. New insulation with a high R-value will keep warm air inside your house in the winter and cool air inside in summer. View this [map](#) for the recommended R-value for your area. For DIY homeowners, installing insulation in the attic is an easy way to boost energy efficiency. When remodeling or adding-on, installing insulation inside walls and around doors and windows is another great way to regulate your home's temperature. The U.S. Department of Energy has an extensive guide to residential insulation that provides homeowners with knowledge and tips to choose the right type of insulation for their houses. There are five types of insulation available:
  - Standard fiberglass insulation can be purchased in rolls or can be blown into spaces using a special machine.

- Rigid foam board is an easy to install insulation option that has gained popularity with DIY homeowners in recent years because it is less messy than the fiberglass version.
- Cellulose insulation is a plant-based material that has also seen an increase in popularity in recent years in light of new research suggesting that it may protect against fire damage better than standard fiberglass insulation.
- Spray foam insulation can be purchased in small canisters for easy installation around windows and doors. For larger projects like walls and attics, spray foams is usually professionally installed because of safety hazards.
- Radiant barrier insulation is designed for homes in hot, sunny climates. This foil-like material reflects heat and sun from the surface of buildings.

Take control of your energy costs with these home efficiency tips. Paying a little more attention to how and where energy is wasted in your home can make a remarkable difference on your next power bill.