

Home Energy Use

Main users: heating and cooling, lighting, and powering appliances and devices. Avoid **vampires**: devices such as televisions, radios, computers, clocks, computers, and game consoles that consume power even when they turned off! Many changes to reduce home energy use are easily implemented and quite effective.

Ways to Save Energy in Your Home and Reduce Your Carbon Footprint

Heating & Cooling Your Home

1. Go to the Pepco website for Ways to Save:
<https://www.pepco.com/WaysToSave/ForYourHome/Pages/MD/EnergyAssessments.aspx>
2. Sign up for solar and wind power
3. Change your furnace filters regularly
4. Replace oil, coal, and natural gas heating systems with a modern heat pump
5. Install a programmable thermostat
6. Turn it down! Set heat at 68 or lower in the winter and A/C at 78 or higher in the summer
7. Use fans instead of A/C
8. Install a solar hot water heater and/or solar panels
9. Don't heat or cool unoccupied rooms
10. Tune up your furnace and A/C once a year
11. Close your fireplace damper and use insulated doors

The Whole House

1. Use LED light bulbs (preferably) or fluorescents
2. Turn lights off when you leave a room
3. Use programmable light switches
4. Install energy efficient, double-pane doors and windows
5. Insulate your home thoroughly
6. Caulk and apply weather stripping around doors and windows
7. Install insulated curtains and blinds, and open and close them to your advantage
8. Insulate hot water pipes
9. Disconnect **vampires** such as computers, DVD players, and other devices that draw energy even when not in use
<http://www.savewithsrp.com/advice/appliance/energyvampires.aspx>
10. Install low flow shower heads
11. Turn the temperature down on your hot water heater
12. Take shorter showers

In the Kitchen and Laundry Room

1. Run the dishwasher only when full
2. Use Energy Star appliances and devices
3. Run washers or dryers only when fully loaded
4. Let your dishes air dry
5. Wash your clothes in cold water
6. Clean your dryer vent after each use

In the Yard

1. Grow grass with 12 inch roots to increase carbon sequestration, www.pearlspremium.com
2. Mow less frequently
3. Collect water in rain barrels and use this water to irrigate your grass
4. Plant native trees for optimal carbon dioxide sequestration; www.behnkes.com has knowledgeable staff, species
5. Plant a bee and/or butterfly garden for better carbon dioxide sequestration and to reduce mowing
<http://monarchbutterflygarden.net/butterfly-plants/>

Home Energy Audit Resources

Know your footprint:

<http://www.earthday.org/take-action/footprint-calculator/>

MD Energy rebates:

<https://marylandenergyaudit.net/rebates/>

Find certified energy auditor:

<http://www.bpihomeowner.org/>
<http://www.resnet.us/>

Sealing and insulating:

https://www.energystar.gov/index.cfm?c=home_sealing.hm_improvement_sealing

About Home Energy Sources

Homes energy sources include coal, oil, natural gas, solar, wind, and biomass. Each of these sources can be processed to produce electricity or heat. **Increasing home efficiency or reducing energy consumed is another source of energy.**

Fossil Fuels

Coal, oil, and natural gas use is the cause of global warming, and these energy sources are destroying our planet.

Fossil fuels (coal, oil, and natural gas) release substantial amounts of carbon dioxide into the atmosphere when consumed. Carbon dioxide and other gases are called “greenhouse gases” because they cause the earth to retain heat. Fossil fuel producers place great hopes on recapturing carbon dioxide—so-called carbon sequestration. However, this technology is not yet advanced enough to be adequate for the task.

Natural gas is sometimes considered the least damaging to the environment. However, unprocessed natural gas that is leaked from storage or pipelines into the atmosphere is an extremely potent greenhouse gas, and is far more damaging to the atmosphere than an equivalent amount of carbon dioxide.

Renewable Energy Sources

Solar, wind, and biomass are ultimately derived from recent sunlight, and in that sense are considered renewable. However, not all forms of biomass are readily renewable.

Increased home energy efficiency is the least recognized and least costly source of energy for the home. Almost all sources of energy for heating and cooling must be processed and transported, at substantial costs. Better home energy efficiency has widespread benefits.

See options for buying your electricity from wind on the Washington Gas website:

<https://www.wglenergy.com/residential/renewable-energy>

See MD Public Service Commission Green Options
<https://www.psc.state.md.us/electricchoice/green-options/>

Wind energy is obtained primarily from wind turbines. Some recent studies conclude that modern turbines are now efficient enough that wind energy is a less costly source of energy than coal in favorable locations. When we consider implicit costs (such as harm to the environment due to global warming), wind energy clearly is a far cheaper energy source than coal. Of course, favorable locations for wind production do not always coincide with heavily populated areas, so for most of us, wind energy must be transported from where it is produced to where it is used.

Solar energy is captured through solar water heating and photovoltaic solar. The costs of producing photovoltaic solar energy have not yet fallen below the cost of fossil fuels, but the costs of harm to the environment due shifts the cost balance. Solar water heating is cheaper than photovoltaic solar energy and is quite possibly cheaper than all other sources. Not needing to transport solar energy from where it is collected further reduces its cost.

In recent years, some area homeowners have installed ground source heat pumps or **geothermal heating and cooling** systems. Heat pumps are bi-directional air conditioners. These pumps circulate water into the ground. In the winter, heat pumps extract heat from the ground, and in the summer, they pump excess heat into the ground.

The most convenient form of **biomass** for home use is wood. However, live trees that are cut down are not readily renewable and their loss destroys an important source of oxygen. Burning wood also produces pollutants (soot/ash) and adds CO² to the atmosphere.

Books “Alternative Energy for Dummies,” Rik DeGunthar

“Basics of Energy Efficient Living,” Lonnie Wibberding

“Renewable: The World-Changing Power of Alternative Energy,” Jeremy Shere

“Building Green,” Clarke Snell