

Energy Saving Recommendations

The average home can reduce their energy consumption by at least 25% - 40%.
Being energy efficient extends the life of appliances and makes your home more comfortable!
You can reduce consumption without losing quality of life!

Replace Light Bulbs with LED Bulbs (Not Compact Fluorescent)

- Many people have tried CFL's (compact fluorescent bulbs) and do not like them. Replace standard incandescent light bulbs and compact fluorescent light bulbs (CFLs) with LED lights. This alone will save over 15% of the average electric bill. LED bulbs are much cheaper than they were even last year and they use 1/10th the power of incandescent bulbs, and last about 25 times longer! They do not have the warm up period to achieve full luminescence that compact fluorescent bulbs have and they work much better in outside when cold. Menards, Lowes, Home Depot, Meijer and COSCO have the best prices for LED bulbs. You will see 800 lumen bulbs for over \$20 each at some places. Do not pay more than \$3.50 for an 800 lumen LED bulb. The 800 lumen are great for most fixtures. Go through and figure out which bulbs you use the most and start by replacing them first.

LED Night Lights

The new LED night lights take less than 1 watt of power. Buy the ones that have the built in photocell. These will come on when dark and automatically turn off when it is light out. Place them in frequently traveled areas. This will eliminate turning on hallway lights and other areas. If you turn on one hallway light for fifteen minutes a night that has two 60w bulbs you are burning 30Wh a night. The 3/4w night lights, on for an average of ten hours a night will burn 7.5Wh!

Windows

- You can install high efficiency windows, which are 40% more efficient than standard windows. Fiberglass windows are the most efficient. Consider replacing single-pane windows with double-pane windows that are gas-filled with high performance glass (e.g., low emissivity or "low-e" glass). ENERGY STAR qualified windows can help reduce your heating and cooling costs by up to 15%.

Contact Josh Cork at Majic Windows Co – 248-668-9090 (Joshua_cork@yahoo.com). Let him know Michigan Solar Solutions referred you to receive special pricing.

- If replacing the old windows is not in the budget then use the window film kits to seal off the windows. This works in the winter as well as the summer. This will also substantially increase your comfort!

- You can change the window dressing for the time of the year. Light colored in the summer and dark in the winter. These help the sun heat and cool your home. You can open your window treatments on sunny winter days and close them tight on sunny summer days. This will help dramatically.

Use Smart Power Strips or Unplug Electronics

The average home uses about 5% of its electricity powering items in their standby mode. Cell phone, iPads and other chargers still consume power even when the item is charged. TV's, cable boxes, DVR's and even microwaves such this power every minute of every day. You should either;

- Use Smart power strips that cost about \$30. <http://science.howstuffworks.com/environmental/green-tech/sustainable/smart-power-strip.htm>
- Unplug electronics, battery chargers and other equipment when not in use. Taken together, these small items can use as much power as your refrigerator. Your Wifi, router, printer and computer will burn about 275kWh a year in standby mode. Disconnecting them when not used will save most of this.

Water Heater

- Over 90% of the homes I visit do not have their water heater insulated or the water lines coming and going from the water heater insulated. This is a huge waste. In the summer time the hot water line is acting like a boiler heating the surrounding air which puts added load on the air conditioner and the water heater. The heat will wick out of your heater through the hot and the cold water lines, the heater reheats it and this sequence happens all over again.
- A tank-less water heater is a huge energy saver and allows you as much hot water as you could ever use and never run out. Replacing your water heater with a 95%+ efficient on-demand water heater like the one shown here; <http://www.navienamerica.com/Product/Category-NPE%20Series/> This will save money and increase comfort. These water heaters allow you to increase temp or decrease temp by pushing a button on a key pad! This easily allows for warmer winter showers, cooler summer showers and piping hot water for cleaning!

Air Conditioner

- An air conditioner is a heat exchanger. Its job is to pull the heat out of your home. Your air conditioner should never be in the direct sun. If it is you should plant plants that will shade it. The western sun is the worse. Make sure you plant them far enough away as to not disturb the air flow. This alone will substantially reduce your energy consumption and extend the life of your AC unit.
- Using an air conditioner mister such as this one here - <http://www.coolnsave.com/> can save up to 30% in your air conditioning costs. When your air conditioner turns on the air flow pushes a paddle which allows water to mist your air conditioner. The evaporation process cools it down. An example of this is putting rubbing alcohol on your arm. It will evaporate quickly making the section where it was real cool.
- Cooling your attic will cool your home, reduce your air conditioning load and extend the life of your shingles. Using a solar powered vent fan like this one - <http://www.homedepot.com/p/Ventamatic-Solar-Powered-Roof-Vent-Dome-Mounted-Panel-VXSOLDOMWGUPS/202913789> is a perfect solution. When the sun comes up in the morning it starts turning slowly. As the sun gets higher in the sky it starts turning quicker. By midday it is spinning away pumping all the hot air out of your attic. As the sun goes down it starts slowing down until it stops when the sun sets! In the winter this will help stop roof damaging ice dams.

Find & Seal Leaks – Blower Door Test

- Testing for air leaks – Close all the doors to the outside and windows. Turn on your dryer and bathroom exhaust fans. This will cause a negative air pressure balance between the outside and inside. This will cause air to be sucked in from areas that need sealing. Light an incense stick and slowly walk it by your windows, doors, electrical boxes, plumbing fixtures, electrical outlets, ceiling fixtures, attic hatches and other locations where there is a possible air path to the outside. This will help you locate any air leaks that may need caulking, sealing or weather stripping.

Or you can have a company like EcoTelligent Homes to perform a blower door test. They will create a negative air pressure in your home and take thermal heat imaging pictures letting you know which areas are the worst offenders. The test costs about \$275 for the average home. You could spend a few thousand on the upgrades they recommend. Chose what you are comfortable with – anything is better than nothing.

- Sealing cracks, gaps, leaks and adding insulation will save about 20% on home heating and cooling costs. It will also save on electrical costs by keeping the furnace blower fan off more. Blowing in a few more inches of insulation in the attic and putting switch plate and receptacle gaskets between the plate and the switch/plug, on outside walls, will substantially decrease the amount of energy needed to warm your home.

Clothes Dryer

- For every cubic foot of air pumped outside through the vent, a cubic foot of air has to come inside from somewhere. This air comes in from around doors, windows, receptacles and cracks. In the winter this cold dry air has to be heated by the furnace. In the winter you could either hang the cloths up to air dry (adding needed humidity to the air) or if you have an electric dryer you can use a dryer bucket like one shown on this link <http://www.amazon.com/Dundas-jafine-TDIDVK-Aluminum-Ducting/dp/B003FNO51O> . DO NOT USE one of these on a natural gas dryer. During the winter if you take the clothes out while they are a little damp and allow them to air dry, you are helping to put humidity back in the air and keep hundreds of feet of conditioned air outside causing hundreds of cubic feet of cold dry air to come inside.

- Clean out your dryer vent all the way to the outside. It is like arterial blockage. Just like it is harder for your heart to pump blood when arteries are hardening, it requires more energy to push the air through a clogging vent pipe. It could also be a fire hazard and reduces the life of your dryer.

Load Up Your Washers

- Run your dishwasher and clothes washer only when fully loaded. Fewer loads reduce energy and water use.
- Use the light cycle when possible. On my dish washer and clothes washer I do not see a difference in cleanliness. I just use much less energy and my appliances will last longer.
- When possible, wash clothes in cold water. About 90% of the energy used in a clothes washer goes to water heating.

Programmable Thermostat

- Install an ENERGY STAR qualified programmable thermostat – It can save over \$150 a year and pays for itself in less than 12 months. Make sure to install it away from natural cool and hot spots.

Seal Your Ducts

- Having your heating and cooling ducts sealed will save about \$190 per year. If you have a basement the job will be easy!

Refrigerators

- Refrigerators are energy hogs. They are heat exchangers. Their job is to remove heat from the freezer and vent through the refrigerator. Keeping the condenser coil clean on your refrigerator is free to do and will save hundreds in energy, reduce repair costs for the refrigerator and spoiled food when it dies. If you have multiply refrigerators see if you can condense them down eliminating one. If you can, you will save at least a hundred dollars a year. Even if it is just seasonally, I.E. unplugging the beer fridge in the garage during the winter, it all adds up.

- Every time you open a partially filled refrigerator you will lose about 60% of the cool air inside. When you have an empty space in your refrigerator fill a bottle or jug with water and place it in your refrigerator or freezer. Water is excellent at holding the cold and will displace air allowing for more savings. In the winter you can put the jug outside to freeze and exchange it for the unfrozen one in your fridge. These ideas will extend the life of your refrigerator while substantially reducing the electricity these energy hogs use.

If you have an idea that is not listed above, please let us know so we can share it to help others!
