

Ways to save with or without solar

The following methods have shown to significantly reduce energy costs in the average home. Implementing one or more of these suggestions has the potential to reduce your energy costs - a savings that can compound over time to outperform even the best investments.

Even if you do have solar, if you don't cover your entire electric bill, some of these suggestions can help reduce your electric usage to the point you might.

This is exactly what happened in the case of the Solar Coach. The PV Solar system installed in 2013 was not quite meeting all of the electrical needs, so a campaign of electricity conservation measures was undertaken. The following general techniques were applied to reduce usage by 32% in a tight house that had aced an energy audit: Heat Pump Hot Water Heating, High Efficiency Pool Pump, Electrical Load Analysis, Vampire Mitigation, Lighting, Electrical, & Other Conservation Methods. Details and advice appear in the following presentation, "Residential Solar Power - A 40-Year Story Part 3", 2015 March 30. Bolton Access TV recorded it and a YOUTUBE video will be available soon. The following .pdf file contains the complete presentation, but does not support animation. To obtain a Powerpoint file, which presents parts of the more complex charts incrementally as you work the arrow keys in Slideshow View, please send a request to: solarizebolton@gmail.com.

[Residential Solar Power - A 40-Year Story Part 3](#)

Or, perhaps you can generate a surplus that can be 'donated' to another National Grid user such as your church or local non-profit group using the power of Net Metering.

Energy Audit

You pay a small fee on every electric bill. That fee covers the costs of this program. All you need to do is ask for it. During an energy audit, you will receive some free products like LED replacement bulbs and programmable thermostats as well as deep discounts in home improvements to make the house more energy efficient. You will also learn how to live more frugally and in many cases simple habits will result in significant savings.

Based on the assessment, you might also get no-cost targeted air sealing to eliminate the source of drafts in your home. You may also qualify for the 75% cost reduction of additional insulation services. These two benefits alone can make a tremendous difference in the way your home feels and costs to heat and cool.

It is not unheard of for people to get nearly \$4000 in insulation services for roughly \$600 out of pocket. And that does not even address the savings such improvements bring in reduced energy costs. One family reduced their home heating oil consumption by 50% - that savings paid off the cost of insulation services in just one year. While not typical, the audit results will provide you with an idea of what kind of return you should expect.

[Click here for the National Grid Energy Audit website](#)

Replace bulbs with LEDs

If you start a small budget and use that to slowly replace your most used lights, you will see significant long term savings. One Solarize Bolton member did this and reduced their average daily kilowatt hours from nearly 30 to about 26. That 4 kilowatt hour savings adds up to more than 1.4 megawatt hours per year.

Target your most used lights first. Recessed can lights in the kitchen or other living areas can be retrofitted with LEDs that use roughly 20% of the power. You can increase the light of dark fixtures by using a 60watt equivalent LED where a 40 watt bulb once lived and still use less power. Dim basement and garage lights can be replaced with high power LEDs to make the spaces better lit.

LED motion lights can replace old exterior floodlamps to both use less power when on, and only come on when needed. 100 watt bulbs in exterior fixtures will only use 20 watts with a replacement LED. Go ahead and leave those porch lights on when you are away.

The author uses a desk lamp every day that used to have a hot 25watt halogen bulb. It now houses an even brighter 7watt LED. Since it is on all the time, even that saves money.

[Start here with a pack of 6 60watt bulbs for only \\$10](#)

NOTE: Not all LED bulbs are alike. You might find one that hums or has an odd color light. Just put these bulbs in your garage

openers, basements, closets, hallways, or other less important fixtures. While not universally true, more expensive bulbs do tend to work better. Things like delayed activation, light color, and the way they look in the fixture all come into play. We find that bulbs in the \$10-\$15 range seem to be the ideal. Brands like GE, Phillips, and CREE make some of the better choices.

Domestic Hot Water

Your traditional electric water heater represents as much as 25% or more of your monthly electric bill. They are cheap, so many contractors install them when they build new homes and few people realize just how terribly they impact their energy usage.

If you have natural gas, propane, or oil, using those fuels are actually cheaper in the long run. Some boilers can be fitted with hot water storage tanks and use your heating system to create hot water when it runs.

[Indirect Water Heaters](#)

On demand systems that only fire up and heat when there is a call for hot water have been around for a while, but are usually less than optimal for most people.

[Article that explains the issues with tankless hot water.](#)

However, if your only real alternative is an electric water heater, there is a newer technology that is not only highly efficient and will save you nearly 2 megawatt hours of electricity a year, but is also eligible for clean energy rebates of more than \$700. This is a Heat Pump hot water system.

[US government article on Heat Pump water heaters.](#)

[Document from Solar Coach on Heat Pump Water Heating.](#)

Chances are, your current electric hot water heater is past warranty and might be ready to be replaced. Better to look at these alternatives now and not be at the mercy of a plumber's special when your current tank finally dies.

Drying Clothes

Running your electric or gas clothes dryer uses a lot of energy. One member of the Solarize Committee owns a gas dryer, but only

uses it when the weather does not allow natural drying. hanging close outside is an effective, and cheap method of drying clothes. During good weather, that extra 10 minutes in the morning to hang out a load isn't a lot to spend to greatly reduce costs.

In the winter, you get a double benefit. By using several folding drying racks, you can not only use the dry air in your home to quickly get your clothes dry, but the moisture stays in the home and helps to maintain a healthy humidity. Two [\\$22 racks from Amazon](#) easily holds a single large load of laundry. Sheets are still hung outside due to their size. Simply set up the racks in bedrooms or family room while you are away at work or school and put away on arriving at home.

Other Ideas

Insulation: Most homes have the minimum values allowed, and might not be as tight as it should. In fact, older homes might not even have the current minimum levels of insulation. Adding another layer properly in the attic can greatly reduce heat loss in the winter and reduce cooling costs in the summer. Fixing drafts around doors and windows will improve the way a home feels even when the temperature does not change. Be sure to have your insulation measured and your home tested for leaks during your energy audit. As the cold weather arrives, a thermal camera can pinpoint areas where you need to seal or better insulate. Many times you can make a significant difference with a set of heavy drapes or thermal shades over older windows.

Replacement Windows: Older homes can benefit with new windows. Between drafts, poor insulation, and modern thermal coatings, new windows can vastly improve the energy efficiency of your home.

Program heating and cooling times: You don't need to heat bedrooms while you are at work and the kids are at school. You don't need to heat the living areas when you are asleep. Programmable thermostats can adjust to your daily routines and keep cooling and heating systems off in areas where you don't need them. They all have easy overrides for the times when a schedule changes for the day, but most times, you can leave the regulation to the thermostat. If you have multiple heat zones, you can see an even greater savings as you program each zone to reflect the use of that area. Some high end thermostats even program themselves by monitoring the house and knowing when people are home, away, awake, or asleep.

[Article on programable thermostats.](#)

Lifestyle: In many cases, changing a few habits can make a significant difference in your electric and fuel bills.

- Extra blankets in the winter can allow you to turn the thermostat down more at night.
- A throw over you in the evening watching TV can take the chill off.
- Having a strict policy on turning lights off when not needed can reduce your power consumption.
- Wearing slippers and heavier clothes around the house can allow you to set the daytime temps even lower.
- Clustering showers, dishes, and laundry reduces the overall demand on hot water and can greatly reduce the energy needed to make hot water over the course of a week.

Technology:

- Home automation timers and smart phone linked controls can help reduce the number of lights needed to be left on and can aid in home security by looking more like someone is home.
- "Smart" power strips can completely turn off home entertainment devices - some cable TV tuners draw significant power even when off.
- Remove the wall warts - phone chargers and other transformers draw power all the time - unplug them when not in use, or replace multiple chargers with a single charger with multiple ports.
- Installing radiant floor heat in bathrooms can allow you to keep the overall air temps cooler but still be comfortable.

If you would like to know more about any of these ideas, please contact us at: SolarizeBolton@gmail.com

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