

Everyone can get started in their personal and community campaign with little or no money just by changing their energy habits and eliminating every form of wasted energy possible.

### **Here are some ways to save energy that cost absolutely no money:**

1. Set the furnace thermostat at 68 degrees or lower, and the air-conditioner thermostat at 78 degrees or higher, health permitting. 3 percent to 5 percent more energy is used for each degree the furnace is set above 68 degrees and for each degree the air conditioner is set below 78 degrees.
2. Wash only full loads in a dishwasher and use the shortest cycle that will get your dishes clean. If operating instructions allow, turn off the dishwasher before the drying cycle, open the door and let the dishes dry naturally.
3. If it's winter, let the sun shine in through the south windows. This is called passive solar gain. There is always a net gain in energy coming from a south facing window. A whole home can be designed to provide most of its heat this way.
4. When the sun is not directly shining in, close the curtain to *protect against heat losses. (For an additional investment, insulating window treatments like Window Quilt offer terrific sealing and insulating. The system can even be motorized to go up and down depending on the sun.)*
5. Move furniture away from radiators and off of heat vents to allow the warm air to freely circulate to the living space.
6. Block unused fireplaces to keep air from escaping up the chimney. Keep dampers closed between uses of fireplaces. An open damper can empty all the heated air in a room in minutes.
7. Cook two days worth of meals at once. Reheat the second day's meals in the microwave, which uses 80% less energy.
8. Allow the second meal to cool to room temperature before putting it in the refrigerator or freezer.
9. Defrost food from the freezer by putting it the fridge the night before. The benefit is two-fold, because the frozen item provides free cooling to the refrigerator box as it thaws.
10. Don't allow ice to build up in the freezer. When it reaches one-fourth inch, it's time to defrost. Built up ice serves as an insulator to keep the much cooler refrigerant from absorbing the warmer air inside the freezer box.
11. Check door seals on your refrigerator by putting a sheet of paper or a dollar bill between the door seal and the box. If you can easily pull the paper out, fix or replace the seals.
12. Don't waste food. To the extent that food represents a CO<sub>2</sub> load for its procurement, shipment, storage, and retailing, when we waste food we are unnecessarily putting CO<sub>2</sub> up there that does not need to be. Save your uneaten food and eat it at the next meal.
13. Drink more water. From a strictly carbon producing standpoint, drinking water from the tap represents less of a footprint than soft drinks and most other beverages we might choose. The manufacturing and shipping of beverages of all kinds gives them a carbon footprint. Even if we live in places like L.A. where the water tastes terrible, we can purify it easily with products such as a Brita filter and have cool, clean water. Dentists attribute many dental problems to drinking sugar-filled pop. Not only will you produce less CO<sub>2</sub>, your teeth, joints, internal organs, and complexion will be a lot happier.
14. Instead of getting into the car, starting it, putting on the seat belt, then going, try getting into the car, putting on the seat belt, and then starting the car.
15. When cooking, turn off the heat just before you think you're finished and let the residual heat continue to cook for the final minutes. Bring rice, pasta, and potatoes to a boil then turn off the heat and let them set for 30 minutes.

16. Do as much as you can without using paper. Bank and pay bills online. Use electronic, not paper, cards for socializing. What a perfect way to communicate a thank you, party invitation, or announcement of a pending event. Websites like Evite allow you to easily send announcements and invitations. Some eCards can have animation, making them more fun than a written card. The footprint is far less than a paper card made from a tree, then shipped to a store, and carried by the U.S. Postal Service in multiple fossil fuel powered vehicles that deliver it to your home.
17. Use your laptop more than your desktop computer. Laptops use far less energy. The most efficient laptops use 10 watts compared with a desktop that easily use 10 times more.
18. Between uses, make sure your computer is completely OFF. Use a meter to test and make sure.
19. Disconnect your doorbell. It draws a few watts of current all the time. Put a little sign that says, "Please knock" or "Out of Order" on the doorbell. Start checking out doorknockers or come up with your own idea on how to build one using materials you have lying around.
20. Try not to drive if you really don't have to. In my work, for instance, I can look at a satellite photo of a rooftop to determine its feasibility for solar panels. I check orientation and shading and discuss feasibility over the phone with a prospective customer without having to drive all the way to the building when the site obviously isn't good for solar. This not only saves gas and CO<sub>2</sub>, it saves time.
21. Hang your clothes out to dry. Use an outdoor clothesline in the summer and an indoor clothes-drying rack in the winter.
22. Recycle almost everything. If recycling isn't available in your area, raise hell until it is. Dealing with recycled goods requires half the carbon footprint that trashing everything does.
23. Riding a bicycle is the most energy efficient transportation there is. There are 125,000 BTUs in a gallon of gas. It takes 110 BTUs to ride a bicycle one mile. Therefore, when riding our bikes, we in essence are getting the equivalent of 1,136 miles per gallon. Do every errand you possibly can by bicycle. Get some saddlebags to haul things. My wife and I have done a week's worth of grocery shopping on our bicycles.
24. Walking takes 500 BTUs per mile, which translates to 250 miles per gallon. Walking and biking are the least carbon intensive methods.
25. Travel light - extra weight means extra CO<sub>2</sub>.
26. Reuse your water bottles. Be sure to sanitize them between uses.
27. Buy big boxes of cereal and other products, or buy in bulk, to reduce packaging.
28. Re-use whenever possible, and avoid disposables. For instance, change blades in razors rather than buying the plastic ones you use a few times and throw away.
29. Give unwanted goods to resale shops rather than putting them in the garbage.
30. Choose products that will decompose. Compost food scraps.
31. Pay attention to your gas and electric bills. When your energy use starts going down, you'll know you're on the right track.
32. Buy recycled. There's a whole industry based on products such as tiles made from recycled glass, insulation made from cellulose (newspaper), and a host of other products. Green architects and designers are familiar with these products, many of which cost no more than petroleum based or non-recycled products.
33. If you're a coffee or tea drinker, or use hot water for any beverage, rather than overfilling a kettle and boiling excess water that later cools and wastes half the energy pour the exact amount into the pan or kettle that fits into the cup you'll use. My personal favorite way to do this is with a kettle I used in India. I filled my teacup with water and poured it into a countertop plug-in kettle, which had an electric element inside that directly heated the water. India uses 240 volts. That cup of water was heated in seconds. I'd seen similar kettles in the US but they're only 120 volts so they take exactly twice as long. I brought a 240-volt model back from India, along with the electrical parts to wire it to 240-volt plug in my home so I could enjoy supercharged hot water.
34. Unplug your cell phone charger from the outlet between charges. The adapter draws energy even when the phone's not there. This is true of nearly all other chargers for laptops, battery chargers, fax machines - anything with a power cube or adapter.

35. Set your refrigerator to no colder than 37 degrees and freezers to zero. My dad, a retired union electrician, told me he had to replace the thermostat in his refrigerator. The device was failing to turn off. "It was a comical situation," he reported, "the milk has ice floating around in it, the celery is like a green popsicle, and I dares not challenge a carrot."

**This is a list of items that cost very little, and can easily pay for themselves in a very short time:**

36. Install energy-saver showerheads. New heads can be easily changed or for even less money, low flow gaskets can be inserted into most existing shower heads.
37. Clean or replace furnace and air-conditioner filters regularly, following manufacturer's instructions.
38. Fix defective plumbing or dripping faucets. A single dripping hot water faucet can waste 212 gallons of water a month. That not only increases water bills, but also increases the gas or electric bill for heating the water.
39. If you have single pane windows, upgrade to double pane. If you can't afford it now, use cling film. It's nearly as effective and costs pennies per window.
40. Stop air-infiltration. Air leakage is the biggest energy waster in a home. Weather-strip exterior doors, seal around windows, caulk wherever light is coming in, caulk at the bottom of your exterior siding (otherwise, air travels underneath the siding and up the wall). Buy inexpensive electrical outlet and switch box insulation pads to cut air leakage. Install everywhere, not just on exterior walls. Use caulk or spray foam to seal around any wall penetration for pipes, vents, or other mechanical equipment.
41. Use power strips to control phantom loads. Plug your remote controlled TV into the power strip, then turn it on and off when you enter and leave the room.
42. Use timers on electrical water heaters.
43. Use a tea cozy to keep tea water hot. Radiant insulating material such as Reflertex has all sorts of purposes.
44. As soon as you possibly can purchase and start using a pressure cooker. These amazing devices cook food in a fraction of the time.
45. Purchase a cardboard file box, line it with Reflertex, and use it as a residual cooker. Any food brought to the boiling point can be taken off the stove and placed in the insulated box where it will continue to cook without additional energy input. Combining this with a pressure cooker is amazingly efficient. Once the pressure cooker hisses at full steam, turn off the heat, and place the cooker in the box. You can do a roast, a bunch of artichokes, a dozen hard-boiled eggs, or a weeks' worth of oatmeal this way with one tenth the energy of conventional methods.
46. Locate your freezer outdoors if possible. Placing it in the coolest possible temperature environment will reduce the energy required for it to keep things cool. Experiment with an outdoor or through-the-wall refrigerator.
47. Use only compact fluorescent or, better yet, LED lights. Purge away and recycle all incandescent lighting. **DO NOT WAIT UNTIL THE INCANDESCENT BULBS BURN OUT.** Get rid of them now. They're evil!
48. Get rid of your old Christmas lights that have hundreds of 5-watt bulbs and replace them with LED strings where all 100 bulbs use less than 5 watts.
49. **Buy green energy.** One cent per kilowatt-hour is the best investment you can ever make in your planet. If your utility doesn't offer a green power purchase option, bug them until they do. Get your state legislator to sponsor a bill.
50. Buy organic produce. Whereas large-scale commercial farming methods increase carbon dioxide in the atmosphere, each acre of soil farmed organically captures over 7,000 pounds of the CO<sub>2</sub> per year, according to a ten-year study conducted by Rodale Institute. (LaSalle)

**This is a list of items that will require more of a capital outlay,**

**but will pay for themselves in months or a few years:**

51. If you're about to replace your oven, consider a convection oven, which uses less energy.
  52. Insulate the foundation on the outside of the building. Dig down to the footing, line the vertical foundation wall with at least 1" of rigid insulation (more in colder climates). Install a "Z" flashing between the siding and the insulation. Back fill the dirt. This is more labor intensive than materials costly. Get lots of help.
  53. Install tubular skylights to bring natural light into a gloomy room and hallway.
  54. Invest in a solar cooker, or solar oven. They cost as little as \$20 or as much as \$500. Use it whenever you can.
  55. Install a solar powered attic fan for summer cooling of the hot attic.
  56. Install sunscreens on the exterior of south and west facing windows that allow unwanted heat in the summer. Cost is about \$2 per square yard, which is very little in relation to the benefit. Payback can be in less than a month!
  57. Install interior window treatments to keep heat in during winter. This will cost more but increases the R-value of a window by three times.
  58. Install a solar water heater. These save a huge amount of energy, on the order of 2,500 kilowatt-hours per year.
  59. Install a solar photovoltaic system. With a big enough PV system you can be a "Zero Net Energy" home or business, producing 100% of the energy used on site.
60. When it comes time to replace your refrigerator, get a Sunfrost or at least the best Energy Star model you can afford.

Our lives consist of a hundred energy choices every day. We are aware of some, and not aware of others. Replacing a single nightlight might seem a tiny and insignificant change. It is small but it is not insignificant. The sum of all of our energy choices affects in direct proportion the amount of CO<sub>2</sub> that enters the atmosphere. Every single energy transaction counts. A million small transactions add up to a big one. When we become aware of all of them, truly amazing things start to happen. When we extend simple energy saving principals to our communities and our world, a miracle can happen.

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