



It's time to take charge:

A Citizen's Guide to Reducing Energy Waste

The future is here—but we're living in the past.

Clean energy from the sun and wind can provide for our energy needs without the global consequences of pollution, yet we're still producing and consuming virtually all of our energy in ways that do lasting damage to our environment, our health and our climate. To make matters worse, much of the dirty energy we produce goes to waste.¹

There is a better way. We can have healthier lives right now and a livable future for generations to come—but to get there, we must transform our production and consumption of energy. That means a major effort by all of us to conserve energy and eliminate waste, coupled with a steady transition to clean, renewable sources of energy.

The good news is, **America can reduce its energy consumption 40-60% by mid-century**, simply by using better technologies and eliminating waste across our economy—and those reductions are the lowest-cost climate solution we've got.² There's plenty we can do as individuals, plus we need our governments and other institutions to lead the effort, providing us with policy tools and continuing to advance technological solutions.



REASSESS TO USE LESS

The cleanest, most affordable energy is the energy we don't use in the first place. So start by focusing on where you can use less.

Could you walk or bike, instead of drive? Can you turn down the thermostat when it's cold and turn it up when it's hot?

Daily needs like heating and cooling, transportation, washing your clothing, and doing the dishes are made a lot easier by energy, but most of us can find ways to meet these needs more efficiently.

Adjust the temperature

- » Check your water heater temperature. In most households, 120 degrees is a sufficient temperature to heat water, saving you money and energy compared to higher temperatures.
- » Change your thermostat. In winter, set your thermostat to 68 degrees when you're home and a few degrees cooler when you are away from home or asleep. In summer, let your house get warmer when you are away and only turn your thermostat down to 78 when you are actually in the home and need cooling. In winter, you might want a sweater indoors. In summer, if you need a sweater indoors, that's just silly.

Rethink your transportation

- » If you have a job that doesn't require you to be in the office, telecommute a few days a week.
- » If you need to go into the office, set up a carpool or take public transportation.
- » Have a lot of errands to run? Do them in one trip and cut down the number of trips you take each day.
- » Walk or bike when you're not going far.

Change your washing habits

- » Whether you're doing dishes or laundry, wait to run a load until it is completely full.
- » Wash your clothes in cold water. A washing machine spends 90% of its energy to heat water.
- » Line-dry or rack-dry your clothing to skip a dryer cycle.
- » When washing dishes in a dishwasher, skip "heated dry" and simply open the door at the end of washing. Your dishes will air-dry.



FAST FACT

Leaving your car at home just 2 days a week can reduce your greenhouse gas emissions by an average of 2 tons per year.¹⁰

STOP THE LEAKS

If yours is like most homes, a sizeable fraction of the energy you use for heating and cooling—ten to twenty percent of it—is wasted as a result of drafts, air leaks, and outdated heating and cooling systems.³

To find out whether you have an energy waste problem, start by getting an energy audit. Many utilities provide free or low-cost energy assessments for their customers to help discover the nooks and crannies where conditioned air is getting out, and outdoor air is getting in. Sign up for one today!

Every home is different. But all homes need to keep conditioned air in, once we've gotten it to the temperature we want. Here's how:

Make sure you're using insulation

- » Insulation reduces heat flow in and out of a home. The greater the difference between indoor and outdoor temperature, the more energy is required to keep your home at a comfortable temperature, so if your home is losing air that's "just right", you'll use even more energy.
- » Basements, chimneys, and attics should all be well-insulated.⁴

Proper sealing can lead to big energy savings

- » Leaks and holes in windows, doors and chimneys and poor connections in ducts let "just right" air escape too. In a typical house, about 20% of the air that moves through the duct system is lost due to leaks and holes.⁵
- » Once you find the leaks, caulking and weatherstripping are simple and effective sealing techniques. These can be a DIY project or done by a professional.

Get your windows and doors to help

- » Windows and doors are pathways for energy to enter and exit your home—even when they're closed. Window frames should be sealed and well-insulated; if yours aren't you can get an energy rebate for replacing windows, or use weather stripping to reduce drafts. When your heating or cooling system is running, make sure doors and windows are closed.
- » In summer, use passive-solar rules to keep your house cooler: Close windows and shades or curtains on the sunny side of your house, and leave the cooler side open. Adjust as the sun moves.
- » In winter, use storm windows to prevent cold air from entering your home.



FAST FACT

46% of the energy use in a typical U.S. home goes to heating and cooling.¹¹

MODERNIZE AND UPDATE

With an abundance of new technologies and increasingly efficient appliances in the marketplace, options are plentiful and prices are growing more affordable. From small changes, such as switching to LEDs, to large changes, such as moving away from a natural gas or oil heating system, here are some ideas on how to update and modernize your home to increase energy savings.

Be smart about lighting

- » Replace your lightbulbs with light-emitting diode (LED) lights. LEDs are today's most energy-efficient lighting technology. They use up to 15% less energy and last an average of 15,000 hours longer than compact fluorescent bulbs (CFL). They also offer a variety of options in terms of light color and quality. When compared to traditional incandescent light bulbs, LEDs save up to 80% more energy and last an average of 24,000 hours longer.⁶

Check your faucets and showerheads

- » Repairing leaks in fixtures—faucets and showerheads—can significantly reduce hot water use.
- » Changing faucets and showerheads to more efficient models can increase energy efficiency and reduce the amount of water we use.

When you need to buy new appliances, choose energy efficiency-certified products

- » Refrigerators, washers, dryers, dishwashers, microwave ovens and other common household appliances have all come a long way when it comes to efficiency. There are economic and environmental costs to replacing old appliances, but when you do have to replace them, get the most energy-efficient models you can. Make sure to recycle your old appliances correctly to minimize the impacts of replacing them.
- » Smart thermostats, smart power strips, and smart lights give you more control of your energy use. If you forget to turn your lights off, set your thermometer to a more efficient setting, or power down your TV, you can do it from your smartphone.

Go electric for heating and cooling your home

- » Electric heat pumps are twice as energy-efficient as natural gas systems. Additionally, they reduce your carbon footprint, reduce the risk of gas leaks, and don't create the dangerous air pollutants that gas and oil furnaces can.



FAST FACT

If all refrigerators sold in the U.S. were ENERGY STAR certified, 9 billion pounds of annual greenhouse gas emissions would be prevented. That's equal to the emissions of more than 870,000 vehicles.¹²

BE SMART ABOUT YOUR ELECTRONICS

While new electronics and technologies can broaden our worlds with new forms of communication and entertainment, they also use lots of energy. Many suck energy even when they aren't being used. Be on the lookout for these energy "vampires":

Phone and computer chargers

- » Chargers continue to draw energy even when they are not plugged into the equipment electronic they are intended to charge. Unplug them or plug them into smart charging strips that prevent them from drawing energy when not in use.⁷

Microwaves

- » The average microwave uses more power displaying the time in one year than it does heating your food.⁸ Unplug your microwave after use or, if your microwave allows, turn down the brightness settings.

TVs, Cable Boxes and Video Game Consoles

- » Make sure your electronics are fully powered down when you are done using them. Over the course of a year, these electronics will use more energy in "standby mode" than they do when they are in active use.⁸

Computer

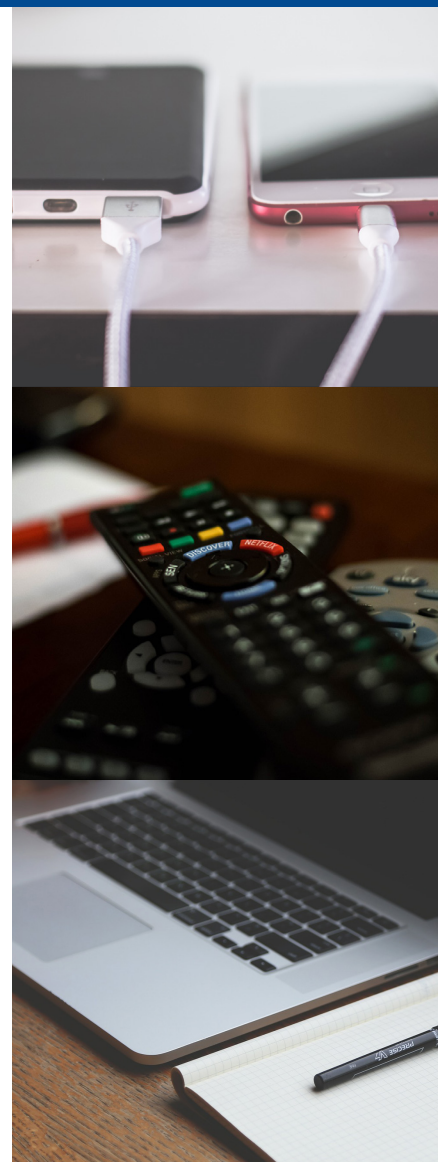
- » Opt to use low power or sleep modes on your computer instead of screensavers. Most screensavers use the same amount of energy as when the screen is in normal use.⁹

There's a lot that each of us can do to reduce energy use. Encourage your neighbors, family, and friends to make changes as well. But there are also things we can do as a community to make stronger policies to save energy. Find out what your state and city or town are doing to support energy efficiency, and ask your representatives to do more.

To find out more, go to http://bit.ly/Energy_Smart

¹ Lawrence Livermore Lab 2017 ²Environment America, We Have the Power Report, pg. 22. ³<https://www.energy.gov/eere/why-energy-efficiency-upgrades> ⁴https://www.energy.gov/sites/prod/files/2017/10/f37/Energy_Saver_Guide-2017-en.pdf ⁵<https://www.energystar.gov/sites/default/files/asset/document/DuctSealingBrochure04.pdf> ⁶<https://www.energy.gov/eere/why-energy-efficiency-upgrades> ⁷<http://eprijournal.com/electric-university/>; <https://www.energy.gov/energysaver/heat-and-cool/heat-pump-systems> ⁸https://www.energy.gov/sites/prod/files/2017/10/f37/Energy_Saver_Guide-2017-en.pdf ⁹Mass Energy's Green Home Guide ¹⁰<https://www.environment.admin.cam.ac.uk/resources/mythbusters-facts-top-tips/screens> ¹¹https://19january2017snapshot.epa.gov/climatechange/what-you-can-do-road_.html ¹²https://www.energystar.gov/products/appliances/refrigerators?qt-consumers_product_tab=0&qt-consumers_product_tab

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FAST FACT

Over the course of a year, TVs and video game devices use more energy in "standby mode" than when in active use.