

Global Warming!

What you can do in your home to help the planet and yourself?

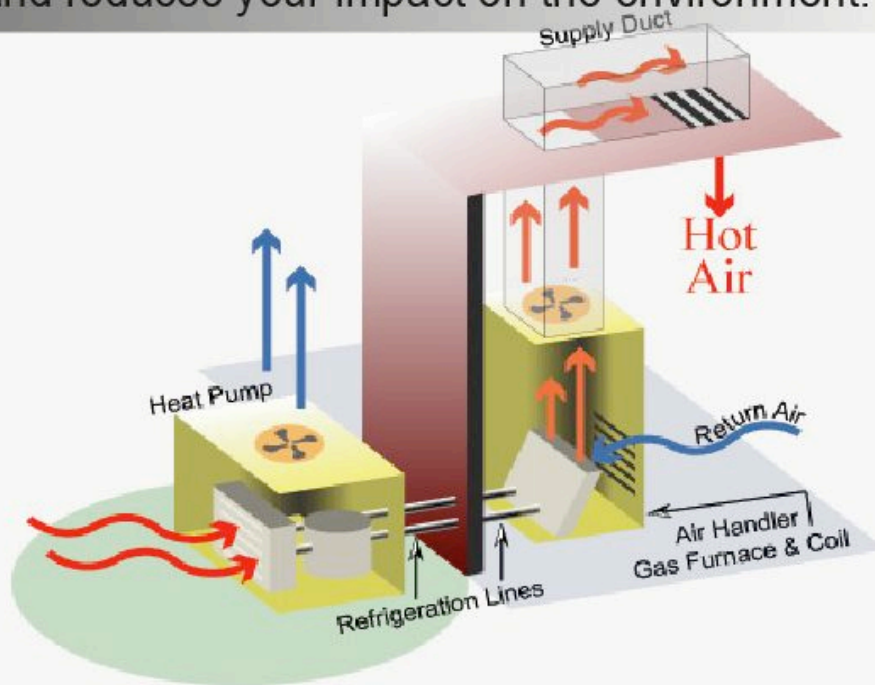


Free

Thing to do for Free

What you can do

Measures that cost nothing, saves you money over the long term, and reduces your impact on the environment.



By turning down your water heater to 120F (from the usual 145F) you can save 163 pounds of carbon dioxide per year.

By increasing your air conditioning thermostat by only 3F you can save an average of 470 pounds of carbon dioxide per year.

Washing clothes in cold water saves almost 500 pounds of carbon dioxide per year. Drying clothes in the sunlight saves 1,386 pounds of carbon dioxide emissions.

Free

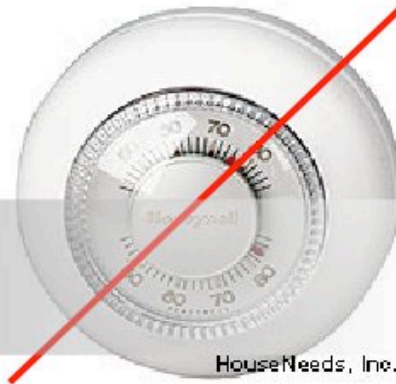
Things to do for Free

	Energy (10 ² Btu/yr)	CO2 Saved (lbs/year)	\$ Saved (lbs/yr)	CSC* life (\$/ton/CO2)
Lower water heater temp to 120F	1.67	214	\$12.12	\$0.00
Increase AC thermostat by 3F	2.45	339	\$18.90	\$0.00
Lower thermostat in winter by 2F	2.72	353	\$19.04	\$0.00
Wash cloths in cold water	2.56	327	\$18.58	\$0.00
Air dry cloths during summer	5.64	779	\$43.60	\$0.00
Unplug extra fridge in garage	3.24	448	\$25.04	\$0.00
Energy-saving appliance features	5.61	769	\$43.04	\$0.00
Turn off unneeded lights	2.72	376	\$21.04	\$0.00
Total free stuff	26.61	3,605	\$201.36	\$0.00
Free stuff, not counted in integrated retrofit package				
Turn off home office equipment	0.99	137	\$7.68	\$0.00
Save cold water	0.96	133	\$32.20	\$0.00
Install water-saving toilets	0.54	75	\$18.07	\$400.00

Heating & Cooling

What you can do

Uses constant energy

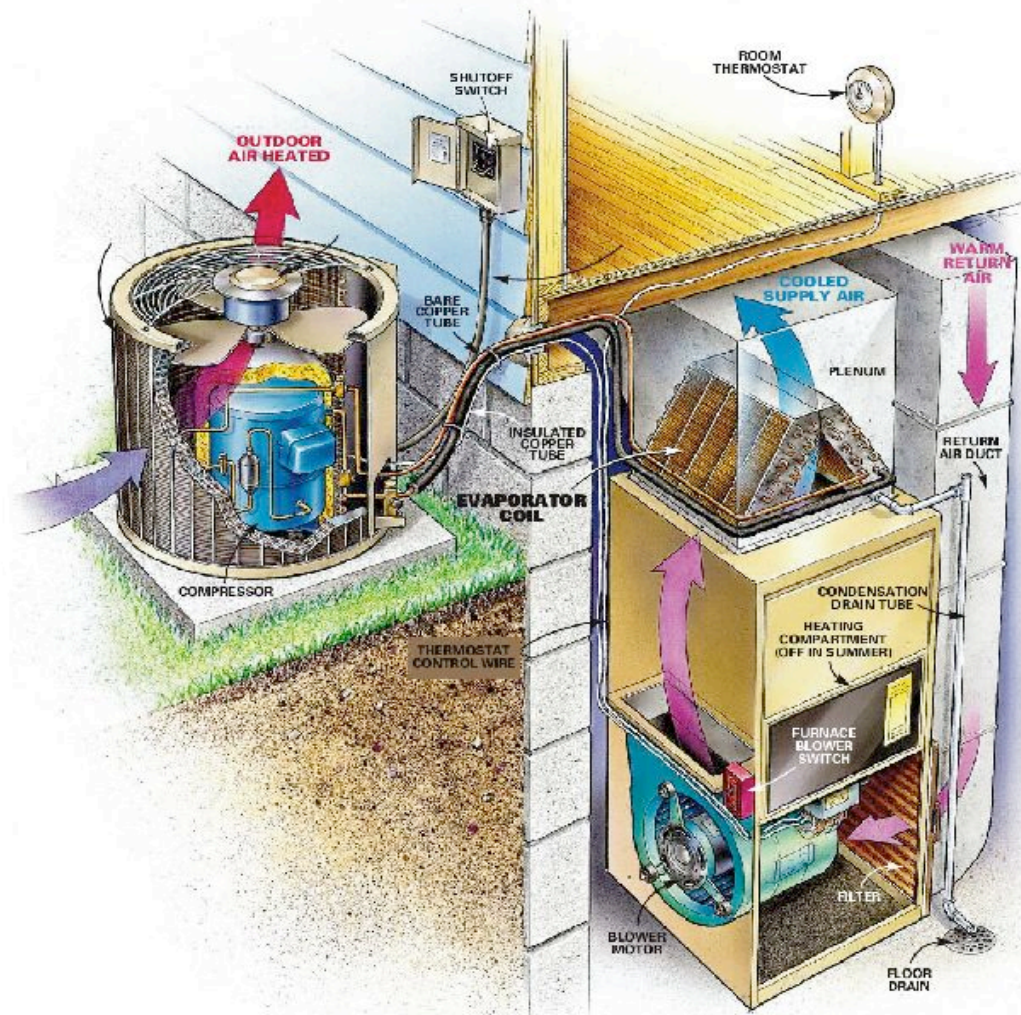


Replace simple dial-type thermostats with smart programmable thermostats, which reduces emissions by 1,000 pounds per year & produce significant savings on your energy bill, with a quick payback of the \$50-100 cost.



Only uses energy when needed:
Energy levels vary

Heating & Cooling



Did you know?

Sealing and insulating ducts is more expensive, but can reduce your emissions by an average of 1,300 pounds of carbon dioxide per year.

Upgrading your heating or cooling equipment with new technology and making sure these units are regularly tuned (typically every year) will reduce emissions by several hundred pounds.

Heating & Cooling



Did you know?

It is more environmentally friendly to use smaller heating and cooling systems, where each individual can change the temperature to their comfort level.

Heating & Cooling

	Energy (10 ² Btu/yr)	CO2 Saved (lbs/year)	\$ Saved (lbs/yr)	CSC* life (\$/ton/CO2)
Programmable thermostat	4.06	534	\$29.02	\$18.73
Seal and insulate ducts	5.12	670	\$36.34	\$39.80
Heating system modification	1.89	248	\$13.48	\$107.53
Heating system tune-up	1.40	181	\$9.78	\$444.44
Air conditioner tune-up	1.00	130	\$7.25	\$615.38
Total heating/cooling equip	13.47	1,763	\$95.87	\$48.97
Additional measures:				
Replace AC (9.0 to 12.0 seer)	1.42	184	\$10.27	\$166.66
Replace 0.50 afue w 0.75	7.63	946	\$51.02	\$117.51
Upgrade from 0.75 to 0.96 afue	5.04	625	\$33.71	\$53.29
Replace 0.50 afue w 0.96	11.00	1,364	\$73.54	\$105.86

Space Heating

	Homes (million)	Energy (units)	Energy (10 ⁶ Btu/yr)	Cost (\$/yr)	CO ₂ (lbs/yr)
Gas	37.8	76,300ft ³	78.5	\$463	8,881
Electric	14.1	5,871 kWh	65.0	\$412	9,628
Oil	7.6	707 gals	98.0	\$650	\$15,823
Propane	3.3	727 gals	66.4	\$609	9,211
Wood	2.8	4.1 cords	82.1	\$410	19,547
No heating	1.2	0	0	\$0	0
Average	n/a	n/a	76.0	\$470	10,132

Insulation

Attic

Walls

Floor

Basement



Sealing Air leaks is the least expensive and most effective way to reduce energy use.

Attic insulation, radiant barriers, and insulated air conditioner can save 1,300 pounds of CO2 a year.

Adding insulation costs more per unit of energy saved, but can nonetheless trim a home's CO2 emissions by 2,000 pounds per year.

CO2 Savings

	Energy (10 ² Btu/yr)	CO2 Saved (lbs/year)	\$ Saved (lbs/yr)	CSC* life (\$/ton/CO2)
Seal large air leaks	11.36	1,489	\$80.76	\$10.07
Add attic instillation	12.90	1,682	\$91.01	\$19.82
Weatherize windows, doors	3.33	438	\$23.74	\$36.53
Add basement insulation	5.74	745	\$40.15	\$44.72
Add air-gap window film	3.19	414	\$22.30	\$125.81
Add an attic radiant barrier	0.91	126	\$7.05	\$134.92
Add wall insulation	3.62	476	\$25.84	\$163.87
Total building shell	41.05	5,370	\$290.85	\$46.82
Other measures:				
Upgrade to superwindows	7.29	971	\$51.36	\$133.88
Roof whitening	3.40	471	\$26.25	\$229.30
Add low- films	2.72	377	\$21.00	\$241.38

Lighting

Residential, commercial, industrial, and municipal lighting uses 22% of all the electricity generated in the U.S., and accounts for 39 million tons of carbon dioxide emissions.



Did you know?

Incandescent

light bulbs may be cheap but they use a lot of energy and have a short life span (750 hours). 90% of the electricity is lost to heat.



Compact Fluorescent

4 times more efficient than incandescent, and last 9-13 times as long. They may cost more up front but not in the long run.

A Bright Idea

ENERGY STAR[®] qualified compact fluorescent lamps, or CFLs can save a homeowner \$25-\$50 over its lifetime.

CFLs vs. ordinary bulbs

CFLs use 75% less energy

CFL	75% less energy
Light Bulb	100%

CFLs last 10x longer

CFL	10x longer
Light Bulb	1x

To enjoy these savings, look for the ENERGY STAR[®] label. For more information, visit www.myenergystar.com

Source: U.S. Environmental Protection Agency

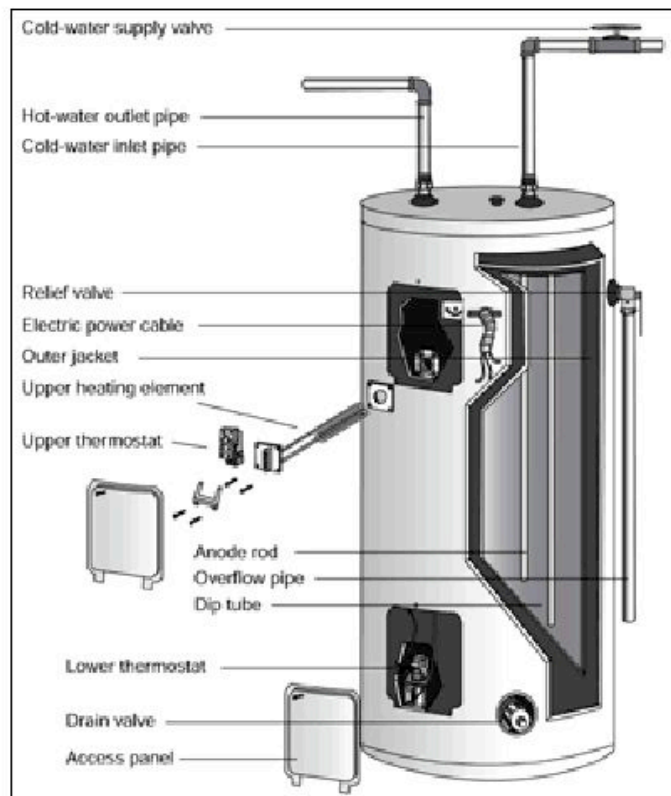
Lighting

	Energy (10 ² Btu/yr)	CO2 Saved (lbs/year)	\$ Saved (lbs/yr)	CSC* life (\$/ton/CO2)
Simple additive approach:				
Total prior to measures	15.52	2,145	\$120.00	n/a
Replace 6 interior incandescents	4.10	566	\$31.68	\$30.77
Replace remaining bulbs w CFLs	4.36	602	\$33.68	\$30.72
Replace 1 exterior incandescent	1.52	210	\$11.76	\$47.37
Occupancy sensor	0.48	66	\$3.68	\$60.00
Total lighting savings	10.46	1,444	\$80.80	\$33.21
Remaining after measures taken	5.06	701	\$39.20	n/a
Savings fraction	67.40%	67.32%	\$67.33%	n/a
Free Stuff:				
Turn off unneeded lights	2.72	376	\$21.04	\$0.00

Water Heating

Did you know?

Americans spend over \$15 billion per annum to heat residential water.



What you can do

Install efficient showerheads and faucets

Turn down the water heater's thermostat

Install a water heater with an insulating blanket

When buying a new unit

seek out most efficient and properly-sized type with the lowest life cycle cost. Consider a tankless water heater.

Water Heater

	Energy (10 ² Btu/yr)	CO2 Saved (lbs/year)	\$ Saved (lbs/yr)	CSC* life (\$/ton/CO2)
Simple additive approach:				
Total prior to measure	27.80	3,558	\$202.00	n/a
Insulate water heaterF	2.06	263	\$14.95	\$12.66
Efficient showerheads	2.89	370	\$21.01	\$18.02
Faucet aerators	0.86	110	\$6.22	\$27.27
Fix hot water leaks	0.22	28	\$1.62	\$28.57
Insulate hot & cold water pipes	0.41	53	\$3.01	\$37.74
Total water heating saving	6.44	824	\$46.81	\$18.59
Remaining after measures taken	21.36	2,734	\$155.19	n/a
Savings fraction (excl free stuff)	23.2%	23.2%	23.2%	-
Free Stuff				
Lower water heater temp to 120F	1.67	214	\$12.12.	\$0.00
Wash cloths in cold water	2.56	327	\$18.58	\$0.00
Total water heating saving	10.67	1,365	\$77.51	n/a
Remaining after measure taken	17.13	2,193	\$124.49	n/a

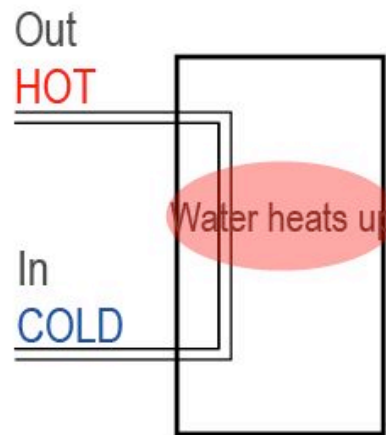
Water Heating

Tankless

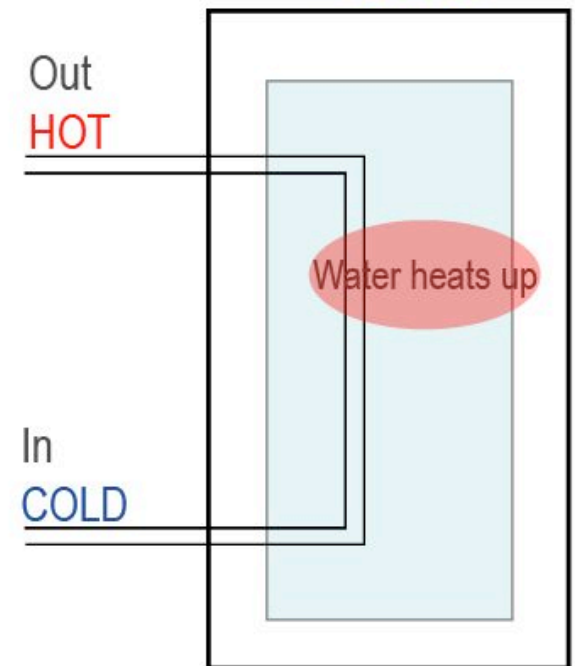


The tankless water heaters use energy when needed.

Tankless



Tank



New vs. Old



Look for the

ENERGY STAR
logo when for
new appliances

Did you know?

If every household in the U.S. replaced old appliances with efficient models, they would collectively save at least \$15 billion per year and prevent the emission of 175 million tons of carbon dioxide annually.

Americans spend \$43 billion annually to run household appliances, which is an average of \$560 per year per family.



Refrigerator



The most emitting CO2 appliance

What you can do

Clean the door gasket and seals

Replace the gasket if damaged and vacuum the condenser coils once a year

Buy a new efficient refrigerator.

New = 700kWh vs. Old = 1,700kWh

Keep the cold air in (don't open the door if you don't need to).

Cooking



phg

6.5% of home's consumption of electricity

What you can do

Use pressure cookers (uses 50-75% less energy than ordinary cookware).

Cover pots with lids

Microwaves use 1/5 - 1/2 as much electricity as a conventional oven



Avoid using ovens

Cook several dishes at a time in one oven.

Washer/Dryer

86% of the energy goes to heating the hot water

Horizontal Axis Machine



Uses 1/2 to 1/3 of the energy of a conventional vertical-axis top-loaders because they need less water to get the same load clean.

Horizontal Axis Machine



What you can do

Use the warm or cold wash cycle but rinse in cold water

Wash full loads. If you are washing a small load, be sure to use the appropriate water level setting.

Dry cloths outdoor on a clothesline.

Clean the lint filter in the dryer after every load to improve air circulation.

Appliances

	Electricity kWh/yr	Cost \$/yr	CO2 emmitted lbs/yr
Air conditioner (room)	1,187	95	1,697
Air conditioner (central)	2,923	234	4,180
Clothes dryer	1,060	85	1,516
Clothes washer (hot water)	1,080	86	1,544
Clothes washer (no h. water)	99	8	142
Dehumidifier	400	32	572
Water heater (electric)	350	28	501
Dishwasher (hot water)	935	75	1,337
Dishwasher (no h. water)	330	26	472
Lighting (average consumption)	1,500	120	2,145
Refrigerator (average in use)	1,281	102	1,832
Refrigerator (best new 21-ft ³)	555	44	794

Other Appliances

Did you know?

Many appliances continue to use power when they are switched off - Vcrs, televisions, computers, telephones answering machines, satellite dishes, and many kitchen appliances such as coffee makers and microwaves. A television when turned off may still draw 1.5 to 8 watts, which equates to 33 kWh per year.



What you can do



To conserve energy use a surge protector and turn it off.

Global Warming!

What you can do in your home to help the planet and yourself.

Information
obtained from:

- NRDC.org
- USGBC.org
- RMI.org



Christine Magar
Info@greenform.net

Greenform.net