



# Analyzing Your Energy Consumption

The first challenge you face in setting goals for reducing your energy consumption is to understand your current energy usage. With this knowledge in hand, you'll be prepared to analyze the potential savings you can reap from your home improvement efforts. You'll also be able to estimate your emissions of carbon dioxide and other pollutants.

Before you get wrapped up in changing light bulbs and fixing up your bicycle, it's worth setting some conservation goals that you think you can meet. So get out a pencil, a calculator and some scratch paper and start filling in the blanks. For each category set a goal for how much you'll save at the end of a year. Meet with your NCC to agree on how much you'll cut back in each area as a whole group.

## WATER CONSUMPTION

**Water used:** \_\_\_\_\_ gallons per year

**Conservation goal:** \_\_\_\_\_ gallons saved

Call your City Water Department (in Helena the phone number is 447-8450) and ask for the past year's consumption on your account.

*Your water usage will be reported in units of 100 cubic feet. 100 cubic feet is equal to 748 gallons.*

Use the equation below to convert 100 cubic feet units to gallons.

\_\_\_\_\_ units per year x 748 = \_\_\_\_\_ gallons per year

If you aren't hooked up to City water, you can figure out your household usage with the easy-to-use water consumption calculator provided here:

[www.cob.org/services/utilities/water-calculator.aspx](http://www.cob.org/services/utilities/water-calculator.aspx).

## ELECTRIC CONSUMPTION

**Electricity used:** \_\_\_\_\_ kilowatt hours (kWh) per year

**Conservation goal:** \_\_\_\_\_ kWh saved

Counting the number of kilowatt hours (kWh) of electricity used in a year is even easier. Pull out your most recent utility bill and find the "Energy Usage Information" section. Your monthly usage will be displayed for the last thirteen months. Add up twelve of those months and write down the number on the line above.

*1.0 kilowatt-hour is the amount of electricity needed to power a 100 Watt light bulb for 10 hours (1,000 Watt-hours). The average family in the U.S. uses 10,900 kilowatt-hours per year. In Montana, a kilowatt-hour costs about 10 cents.*

## NATURAL GAS CONSUMPTION

**Natural gas used:** \_\_\_\_\_ dekatherms (Dkt) per year

**Conservation goal:** \_\_\_\_\_ Dkt saved

Under the "Energy Usage Information" section of your most recent utility bill you see your natural gas usage over the last thirteen months. Add up twelve of those months and write down your answer above.

*1.0 dekatherm is equal to one million British thermal units (BTU) of heat energy. It takes about 1,000 BTU, or 0.001 Dkt, to boil a teakettle full of water. The furnace in a typical Northern home consumes about 100,000 BTUs per hour, or about one-tenth of a dekatherm. In Montana, a dekatherm of natural gas costs about \$8.00.*

For more energy-saving tips, visit the NCC website at [www.savemobile.org](http://www.savemobile.org)

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## TRANSPORTION FUEL CONSUMPTION

**Gasoline and diesel used:** \_\_\_\_\_ gallons per year

**Conservation goal:** \_\_\_\_\_ gallons saved

Start by figuring out how much you drive. The US average is about 12,000 miles per vehicle annually. You can be more precise if you know what your odometer was more than a year ago (sometimes this is recorded on a mechanic's report) and then you calculate the annual mileage based on how much time has elapsed.

Now figure out the fuel economy of your vehicles, or your average miles per gallon. If you don't know this answer, go to:

[www.fueleconomy.gov](http://www.fueleconomy.gov)

to look up your vehicles' rates. Do the math equation below for each vehicle. Add those totals to the number of gallons you use for a boat, lawn mower, snow mobile or other gas-powered toy. Record the total above.

\_\_\_\_\_ miles driven in a year ÷ \_\_\_\_\_ average miles per gallon = \_\_\_\_\_ gallons per year

## SOLID WASTE PRODUCTION

**Solid waste generated:** \_\_\_\_\_ gallons per year

**Conservation goal:** \_\_\_\_\_ gallons saved

How much you throw away each year is an indicator of how much "embedded" energy you are wasting. Embedded energy is the energy used to produce and transport a material product like a newspaper or pop can. To figure this out, simply measure how much your garbage cans hold (they usually say on the side or bottom) and count how many times they're filled in a month. Multiply that number by twelve to get your annual waste in gallons.

## SOLID WASTE REDUCTION

Recycling and composting are ways to re use some of the embedded energy in a material product. It also diverts material from landfills. Take note of what you currently recycle.

## Do you recycle?

Paper: YES NO SOME

Glass: YES NO SOME

Plastic: YES NO SOME

Steel and aluminum cans: YES NO SOME

Do you compost food waste: YES NO SOME

## GREENHOUSE GAS PRODUCTION

**Carbon dioxide emitted:** \_\_\_\_\_ pounds annually

**Conservation goal:** \_\_\_\_\_ pounds of reduction

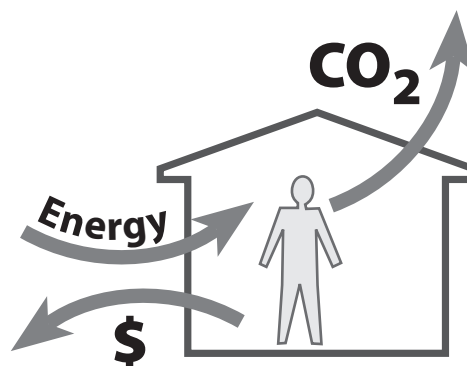
Here's the final question: how much are you contributing to global climate change by emitting carbon dioxide (CO<sub>2</sub>) and other greenhouse gases? And how much can you cut your emissions?

To calculate out how many pounds of carbon dioxide you're generating each year through your energy choices, go to:

[www.epa.gov/climatechange/emissions/ind\\_calculator.html](http://www.epa.gov/climatechange/emissions/ind_calculator.html)

Enter your information, and this online calculator will give you a close estimate of how much your household emits.

*In the U.S., an average family of four emits 83,000 pounds of carbon dioxide per year.*



*The energy you consume costs money every month. The production of most types of energy also contributes to climate change when carbon dioxide is emitted.*

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