



# Work Sheet:

## How Energy Efficient Is Your Home?

You can easily determine the relative energy efficiency of your home just by knowing the square footage of your home and how much fuel you consumed last year. Complete the steps below to figure out how energy efficient your home is.

### Step 1. Determine how much fuel you use.

Determine how much fuel you used last year from all sources, such as oil, wood, propane, etc. You can look at your old bills or call your fuel dealer for this information.

### Step 2. Convert “fuels used” to BTU equivalents.

*(BTUs or British Thermal Units are a standard unit of measurement for heat content in fuels and will give you a common denominator for measuring your fuel usage.)*

Multiple the quantity of each fuel you use (Step 1 above) times its BTU equivalent (in chart below) to get total BTUs for each fuel used. If you use more than one kind of fuel, add the BTU amounts together to determine the total amount of BTU used in your home. Use the chart below to convert your fuel use to BTUs.

### Converting Fuel Use to BTUs

Fuel Type	Number of BTUs (A)	Amount of Fuel Used (B) <i>(from step 1)</i>	Total BTUs by Fuel Used (A) x (B)
Oil	138,200 BTUs/gallon		
Kerosene	136,600 BTUs/gallon		
Propane	91,600 BTUs/gallon		
Natural Gas	100,000 BTUs/therm		
Electricity	3,412 BTUs/kWh		
Wood	22,000,000 BTUs/cord		
Coal	24,000,000 BTUs/ton		
Wood Pellets	16,000,000 BTUs/ton		
<b>Total BTUs Used</b>			



### Step 3. Determine the square footage of liveable space.

Multiply the width of your house times the depth of your house times the number of floors of liveable, heated space. (Basements do not usually count unless they are a heated part of your living space. Include rooms that are not being heated but are in the liveable area.)

### Step 4. Calculate number of BTUs per square foot.

Divide the total BTU used (Step 2) by the total amount of square feet of heated, liveable space (Step 3).

Total BTUs (Step 2) \_\_\_\_\_ ÷ total square footage (Step 3) \_\_\_\_\_ = BTUs/square foot \_\_\_\_\_

### Step 5. Compare your BTU/square foot to an energy efficient home.

If your home uses less than 40,000 BTUs of energy per square foot per year, you have a relatively energy efficient space. If you use over 40,000 BTUs per square foot, you probably have opportunities to improve your heating efficiency, such as improving the efficiency of the building shell (insulation and plugging leaks) and/or improving the efficiency of the heating system. If so, consider getting a Home Performance Energy Audit as a next step. You can also reduce your BTU usage by turning down your thermostat. For every degree you lower your thermostat for the whole day, you will use about 3% less energy for heating.

#### Example for Calculating the Relative Energy Efficiency of Your House

##### Assumptions:

Size of house: 1,600 square feet

Amount of fuel used: Two cords of wood and 422 gallons of oil

##### Calculations:

**Step 1.** Two cords of wood x 22,000,000 BTUs = 44,000,000 BTUs

**Step 2.** 422 gallons of oil x 138,200 BTUs = 58,320,400 BTUs

**Step 3.** 44,000,000 BTUs (oil) + 138,200 BTUs (wood) = 102,330,400 BTUs total

**Step 4.** 102,330,400 BTUs ÷ 1,600 square feet of liveable (heated) space = 63,950 BTUs/square foot

This house is relatively inefficient and has relatively good opportunities for improving efficiency.