

Arlington Energy Committee Meeting Minutes

Sunday, June 30, 2019, from 7:00 to 8:30pm at Arlington's Community House.

Present: Rich Lederer, John Williams, Stephanie Moffett-Hynds, Ron Weber

Stephanie asked everyone to use her new email address: sshynds@gmail.com.

John Williams talked to Keith Squires about LED street lights. The street lights have already been converted to LED bulbs with a savings of about \$700 per month. John is going to try to use Jim Hand's formula to calculate the relative energy efficiency of town hall by obtaining the fuel use and town hall square feet.

Meanwhile, since the meeting, Madison Kremer reports that Efficiency Vermont does not offer free audits for town halls. Stephanie will continue to call around to see if anyone else does or if there are any incentives out there. She will call VECAN and NeighborWorks and see where that leads.

Stephanie also supplied the attached worksheet from BUTTON UP VERMONT to calculate the energy efficiency of your heating your home.

Since only four people attended this meeting, Stephanie will try to schedule another meeting on July 14 from 7:00 to 8:30pm at the Arlington Community House. The meeting was later changed to July 28 to improve attendance.

Submitted by John Williams



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		
Total BTUs Used			



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.