

## Gas versus Oil Heating

By Gary Bent, PhD

From the Energy Information Agency, the price of residential natural gas in Connecticut in August 2015 was \$19.33 per thousand of cubic feet. There was no data for Connecticut for September 2015, but other states had the prices drop in September. Using the decrease that other states had, I estimate the September 2015 price for natural gas in Connecticut to be \$18 per thousand cubic feet.

I heat with oil. In September, No. 6 heating oil cost me \$1.92 per gallon. Now we have to compare the cost of heating with oil to the cost of heating with gas assuming the gas and oil furnaces have the same efficiency. Since oil and gas do not produce the same amount of heat when a gallon is burned, we must use the number of BTUs (British Thermal Units) produced by burning gas and oil.

One cubic feet of natural gas produces 1,027 BTUs; one gallon of oil produces 145,000 BTUs. Thus for natural gas (NG),

$$\frac{\$18}{1000 \text{cubic} \cdot \text{feet} \cdot \text{NG}} \times \frac{1 \text{cubic} \cdot \text{feet} \cdot \text{NG}}{1,027 \text{BTU}} = \frac{\$17.52}{\text{millionBTU}} .$$

This means it costs \$17.52 for natural gas to produce a million BTUs of heat. For oil

$$\frac{\$1.92}{1 \cdot \text{gallon} \cdot \text{oil}} \times \frac{1 \cdot \text{gallon} \cdot \text{oil}}{145,000 \text{BTU}} = \frac{\$13.24}{\text{millionBTU}} .$$

This means it costs \$13.24 for oil to produce a million BTUs of heat. **At September prices it would have been cheaper to heat your house with oil than with natural gas!** So much for it being cheaper to heat with gas than oil.

Of course oil prices might go up and gas prices might go down. Since it costs between \$5000 and \$7000 to convert a furnace from oil to gas, there would have to be a huge swing in prices in oil and gas for the conversion to pay off.