

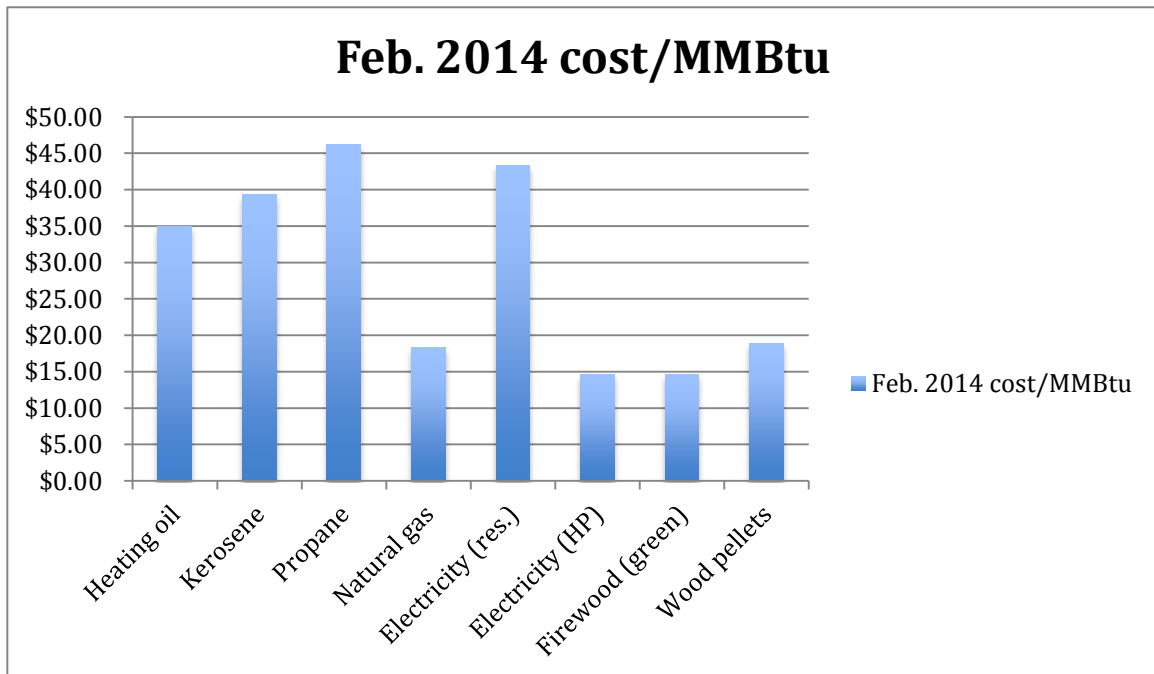
MEMO

To: Members, Senate Committee on Natural Resources and Energy  
From: George Twigg and Scudder Parker, Efficiency Vermont  
Re: Building heating options and background  
Date: March 13, 2014

During today’s hearing on S.202, members requested additional context on issues related to the different types of energy sources used to heat buildings in Vermont, such as comparative cost and market share.

To begin with, the Committee’s focus on reducing heating costs for Vermonters is important and worthwhile. According to the findings of the Thermal Efficiency Task Force, the cost to heat Vermont’s homes and businesses in 2010 was approximately \$600 million. This is a significant drain on the state’s economy, particularly for those who can least afford to pay it.

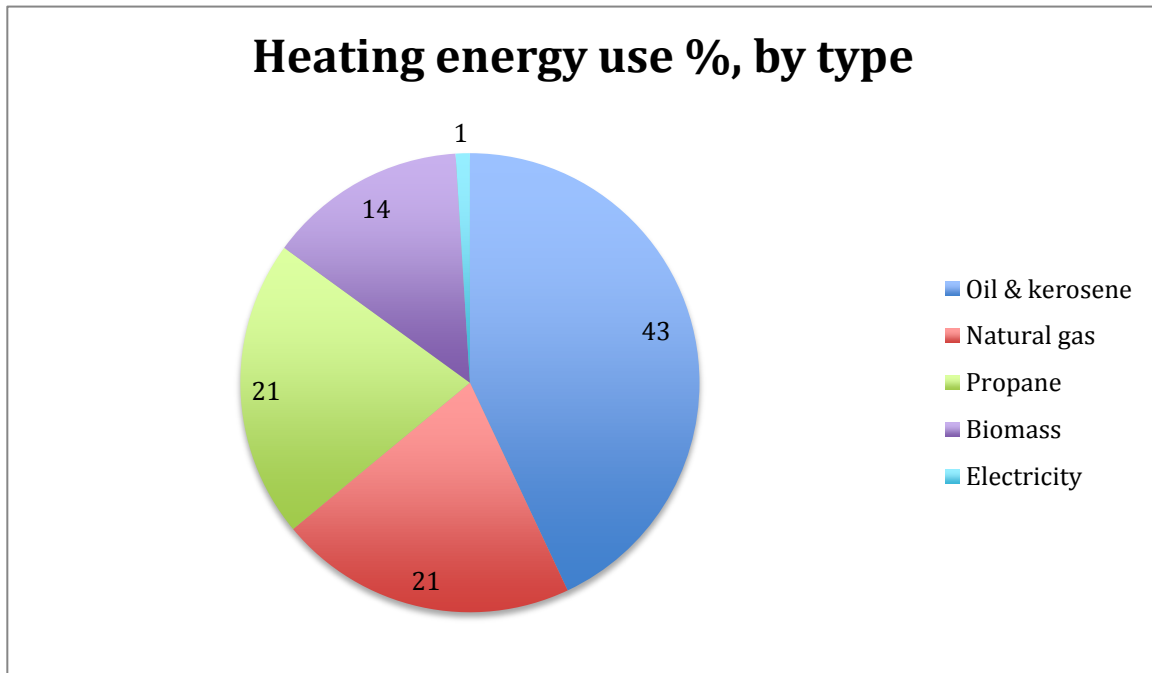
One thing that has become increasingly apparent in recent years is that while improving the energy efficiency of buildings themselves is critical (through measures such as air sealing and insulation), the choice of fuel type also makes a huge difference in terms of the economic burden of energy costs. The Vermont Public Service Department publishes a monthly report on fuel prices in the state, including a comparison of fuel prices per MMBtu (MMBtu is a standardized measurement of energy across fuel types). Here are the prices from the February, 2014 report:



(Note: “electricity (res.)” = electric resistance heating; “electricity (HP)” = heat pumps.)

What this information shows is that there is a vast disparity between fuels in terms of what you get for your energy dollar. In the context of the legislative discussions that have been taking place, heat pumps provide heat at one-third the price of propane and less than half the cost of heating oil. Simply transitioning a portion of your heating load from propane or heating oil to a heat pump yields significant, immediate savings. Efficiency investments made either before installing heat pumps, simultaneously with installation, or after they are installed will provide even greater savings.

To understand the magnitude of this opportunity for Vermonters, next consider the ways in which Vermonters heat their buildings. Data cited in the Thermal Efficiency Task Force found that usage by fuel type broke down as follows:



(Note that this data is a breakdown of usage, not number of homes.)

Taking these two data sets together, what becomes apparent is that nearly two-thirds of the energy being used to heat Vermont buildings is oil, kerosene, or propane, all of which cost two to three times more per MMBtu than does electricity for powering a heat pump. Adoption of policies to shift energy use to a far less-expensive source will yield significant and immediate financial benefits to Vermonters. This positive benefit may be able to help customers make the additional investment in air sealing and thermal efficiency.