

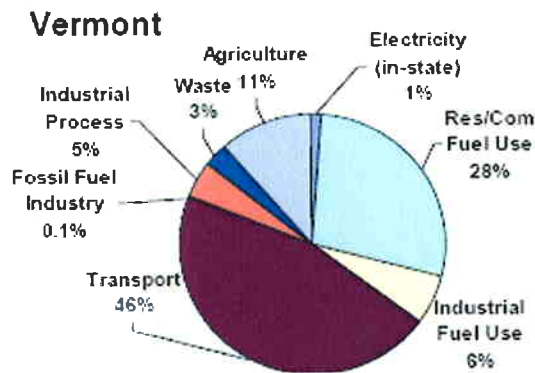
December 1, 2006

Mr. Sivan Kartha, Ph.D.  
Senior Scientist  
Stockholm Environment Institute  
Tufts University  
11 Curtis Avenue,  
Somerville, MA 02144

Dear Sivan,

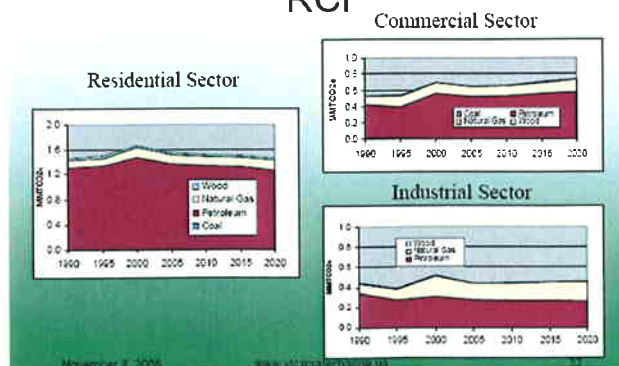
The Energy Supply and Demand Technical Working Group (TWG) was asked during our November 28, 2006 conference call to recommend policy options for reducing Green House Gas (GHG) emissions in Vermont. Per your request, I have identified below a proven option for reducing GHG emissions.

The option focuses on the Residential, Commercial and Industrial sector, or RCI, which, based on the chart below that was provided to the Plenary group, is responsible for approximately 34% of the annual emissions in Vermont.



The data provided also showed the RCI sector is responsible for over 3 MMTCO<sub>2</sub>e of GHG emissions annually. As shown on the graph below the vast majority of the RCI emissions are generated from petroleum-fired equipment, the largest portion of which is in the residential section (most likely from heating equipment). This particular problem is somewhat unique to Vermont as the percentage of residential and small commercial oil-fired equipment in the state is proportionately higher than the rest of the country.

## RCI



This can be changed through the expansion of natural gas. Based on EPA and Vermont ANR figures natural gas is cleaner than oil or wood for residential and small commercial boilers. It is worth noting that some states have relied on natural gas as a key solution to their clean air initiatives, such as converting fleet vehicles from gasoline to compressed natural gas. The table below compares natural gas emissions to oil and wood for a variety of pollutant categories. The table demonstrates that natural gas is a proven means of reducing GHG emissions.

**TYPICAL EMISSIONS OF COMMON FUEL SOURCES**

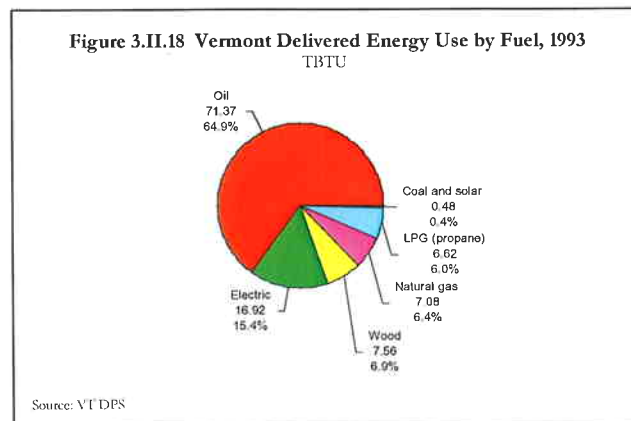
Pollutant, lb/Billion Btu	Natural Gas	No. 2 Oil	Wood
Carbon Dioxide (CO2)	117,647	159,286	195,000
Nitrogen Oxides (NOX)	92 to 98	129 to 143	139 to 300
Sulfur Dioxide (SO2)	1	507	23 to 25
Volatile Organic Compounds (VOC)	5	5	17 to 694
Total Organic Compounds (TOC)	11	4 to 18	39 to 1,618
Total Particulate Matter (PM)	8	12 to 24	300 to 844

Based on information from U.S. EPA and VT ANR  
Emissions from residential and small commercial boilers

Vermont Gas has been expanding the availability of natural gas throughout the northwest part of the state for the past 40 years - and has been effective in reducing GHG emissions for residential, commercial and industrial sections. Estimates of the tons of CO2 emissions avoided by the use of natural gas in Vermont range from 167,000 tons to 309,000 tons depending on the alternative fuel. However, regardless of which alternative fuel it is compared to, it is clear that natural gas has significantly reduced GHG emissions in Vermont.

Not only is natural gas cleaner but the efficiency of the equipment in which it is used is higher than alternative fueled equipment. In addition, the energy efficiency programs available to Vermont's natural gas customers reduce fuel usage and thereby further reduce emissions. By way of quantification, VGS's energy efficiency programs has saved enough energy over the past 12 years to serve our residential customers for an entire year. Finally, it should be noted that since natural gas is delivered directly to customers through an underground network of pipes it eliminates truck deliveries of alternative fuels further reducing fuel usage and emissions in Vermont.

Unfortunately, natural gas availability, up until now, has been limited to the Northwest part of the state. The rural nature of Vermont makes expansion challenging due to the limited consumption available to support the required investment. Consequently, natural gas represents only 7% of Vermont's energy usage while petroleum exceeds 70% as shown on the graph below from the Vermont Department of Public Service, which, although dated, still provides a fair representation of the energy usage in Vermont.



In summary, I recommend that the TWG focus on the potential for reducing GHG emissions in the residential, commercial and industrial (RCI) sectors through a policy which supports the expansion of natural gas in Vermont. This policy would be beneficial because it reduces emissions from a sector currently responsible for over 34% of the emissions in Vermont, because it takes advantage of existing technology with a proven track record for reducing GHG emissions in Vermont and because of its significant potential for further reductions in GHG emissions. Finally, this policy offers additional benefits to Vermont through reducing emissions from the transportation of alternative fuels and through supporting clean economic development in Vermont.

I would be happy to discuss this in more detail with the TWG at the appropriate time.

Sincerely,

A handwritten signature in blue ink, appearing to read "A. Donald Gilbert, Jr.", written in a cursive style.

A. Donald Gilbert, Jr.  
Vermont Gas Systems, Inc.