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Vermont Sustainable Heating Initiative Transition to Economic Energy Independence

Givens:

Fuel Oil Prices are Increasing

Home heating fuel now costs between three and four dollars a gallon in Vermont. The national price for heating oil is up 98 cents from a year ago as of the beginning of January according to EIA surveys. Worldwide we have reached peak oil and we now face a future where less oil will be available than needed. When America was in a purchasers market, meaning there was more than enough oil for everyone, oil prices were very stable. In the last five years there has been evidence that we are reaching peak oil, because oil prices have ranged dramatically. As the price of fuel continues to rise the need for fuel assistance in Vermont will only increase.

Liheap Recipients affected hardest by Oil Prices

Between 2003 and 2007, the number of households Liheap, a federal and state partnership program giving fuel assistance to families increased 26 percent (1). Last heating season the state of Vermont provided an average of \$349 in fuel assistance to low income families around the state. With rising fuel prices the need for aid has grown more widespread and the federal government has been unable to keep up with their share of funding. In result the average grant for fuel assistance has declined this year to \$305 per family. Because of the absence of funding the state plans to compensate by reducing the number of families served by 15% (1). (Liheap – Low Income Home Energy Assistance Program)

In 10 to 15 years only the very rich will be able to afford to heat their homes and businesses in Vermont using fossil fuels. Improving efficiency is not enough. As energy costs continue to rise, those who can not afford to live here will move South, leaving Vermont with decreasing property values.

Biomass Pellets are Suitable for Vermont Homes

In the meantime, to compensate for higher fossil fuel prices many Vermonters will switch to wood heat. This can be good up to a point however many homes and businesses were not built with the intentions of installing a traditional wood stove. Woodstoves are less efficient than biomass pellet stoves and generate more pollution than pellet stoves.

The Need to have a New Heating Technology

According to the Biomass Research Center, we are currently harvesting 20% of our forests capacity to give us wood products (2). They have tracked the increase for wood products in recent years and predict we will be harvesting 50% capacity by 2015 (3). These numbers are debatable, but if a new technology is not introduced many families will revert to wood heating to avoid unaffordable fuel oil prices. One hundred years ago, Vermont forests were far smaller and fewer in between to make room for pastures. It is a real threat that we could soon be repeating history and exceeding our forest resource capacity. Fortunately Vermont is in a unique position because we have the capacity and ability to grow our own biofuels

Most Vermont forests can yield one ton of wood per acre per year sustainably. There are many places where due to soil types and slope conditions that the sustainable harvest is far less and one ton per acre per year and approaches zero as a sustainable harvest (4 & 4.1).

Grass is more Efficient than Wood

Other biofuels such as Prairie Grasses and certain plants can have yields between 1 to 16 tons per acre per year sustainably (5), with the USDA confirming an average of 5 tons (6). Cultivating these biofuels is a far better use of Vermont's unused crop land than planting a forest for wood harvest. Some recent second growth forests can be converted to grasslands to increase the harvest.

Vermont has Enough Underutilized Agriculture Land

Vermont currently has approximately 100,000 acres of underutilized agricultural lands (7). Underutilized agricultural land is not a farmer's best land but rather his secondary fields. Prairie Grass does not require many nutrients and could be harvested on land that could otherwise not be used for food production. Prairie grasses are also perennials and therefore once they are established, they are infinitely renewable.

Vermont could lead the nation on decreasing our dependence on foreign energy by beginning the transition with converting our home heating systems.

Actions:

Incrementally Increase a small Tax on Fossil Fuels.

Tax all fossil fuels used for heating in the state at up to 6% above current rate. This tax would start at .5% and increase each year by 1.7% until a rate of 6% was reached. The purchase of fossil fuels is a drain on the Vermont economy because 85% of this money spent on them leaves the state. Thus the purchasers are creating a burden on the state economy. Money spent on bio-fuels grown and processed in Vermont are an economic stimulus to the state economy.

The money generated from this tax should fund the following actions:

Vermont Government bulk purchase Pellet Stoves and Install Them

Authorize Efficiency Vermont to contract the bulk purchase of sets of 1000 pellet furnaces. These furnaces should be of a type that will burn high and low ash content pellets. Through purchasing them all together the price and quality can be optimized. These furnaces would then be leased at cost to families that currently receive fuel assistance and other low income house holds. The furnaces would be distributed and installed by current stove and pellet furnace distributors, and contractors working with Efficiency Vermont.

Set up first Universal Pelletizer and a Solid Biofuels Research Facility

Borrow ten million dollars to be financed by the fossil fuel surcharge (revenue generated from tax). This money along with matching federal grant money will be used to establish a Biofuels Research Facility in Vermont to be run by UVM. This facility will study optimum sources of biofuels in Vermont, pelletization methods of different feed stocks, storage and delivery technologies. The goal is to have a pellet plant in production by January 2009.

Pellets could be made from a blend of waste paper and packaging including waxed cardboard and paper products that currently end up in the solid waste stream. The pellets could then be provided as fuel to LIHEAP recipients.

Extension Service provide Money as an Incentive to get Farmers Started

Create a \$100,000 Fund for Vermont farmers to apply for grant monies to plant and harvest a variety of

biofuels during the summer of 2008. This program would be run through the Extension Service of Vermont. The farmers would sign a contract to keep the land in bio-fuel production for at least five years.

Create a Biofuels Futures Market

Create a Biofuels Futures Market in Vermont chartered by the state. The economics of this Market need to be totally transparent to avoid profiteering and it should be run as a cooperative for the people of Vermont. This open Market would allow farmers to pre sell their biofuels and consumers to purchase their fuel needs in advance such as Vermonters already do now with fuel oil. The price stability created by such a market will help the biofuels infrastructure grow (more consumers making the switch and more farmers harvesting fuel).

This Transition could have a Multi-Billion Dollar Effect within 10 years

Fossil fuel used to heat Vermont homes and businesses is taxing on the Vermont economy because 85% of that money leaves the state economy. 85% of the money spent on Bio-fuels grown and processed in Vermont stays in the Vermont economy and circulates between 3.2 and 7 times. Within 7 years of starting to transition to a bio-fuel economy, the impact would be between one and three billion dollars a year. This stimulus to the Vermont economy would ripple through all sectors of the economy.

Our initial estimates show that a 1.7% increase every year is optimized to minimize the impact on home owners, while still generating enough revenue to expedite the transition from fuel oil to locally-pelletized biomass.

Vermont's Economy is Shrinking with Every Year we send our Money for energy outside of the State.

Decades ago there was a "Rust Belt" in America. These were the factory areas where the rust of technological decay was seen as symbol of economic depression. Vermont will become part of the "Frost Belt." People who can't afford to heat their homes will leave the frost belt. Property values will drop. Only the affluent will be able to afford to live here. The economy will shrink.

This has happened before in Vermont as cycles of farming and population have come and gone from the Green Mountains. The ruins of abandoned towns still rest in the forests of Vermont. We can avoid this. We do not need to join the frost belt. But we need to start the transition to Vermont's Sustainable Heating Initiative now!

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