

# Vermont's Green Gold

Vermont's farmers are currently facing a devastating "perfect storm" of bad weather, falling milk prices and rising fuel costs. How can we best support them and our local economy during this difficult time and provide new opportunities for growth? How can we create alternative income streams for Vermont's farms that support sustainable agricultural development, expand rural economic activity and keep our fields open?

One solution is dedicated bio-fuel energy crops. Increasing fuel prices and growing alarm over global warming are creating a global demand for alternative energy sources. Although European governments, scientists and farmers have developed sophisticated bio-fuel programs, the United States is only now beginning seriously to invest in alternative energy initiatives. With our strong agricultural base and dedicated environmental initiatives, Vermont is ideally situated to become a leading supplier of these renewable, carbon-neutral biomass fuels.

Vermont's fields could easily be used not only for milk production, but also to produce these profitable, renewable and environmentally sustainable bio-fuels. Our fields contain green gold: each 800-pound round hay bale can produce the bio-fuel equivalent of 40 gallons of heating oil. If Vermont's farmers and landowners dedicate some of their lands to bio-fuel energy crops like Switchgrass and Reed Canary Grass, they stand to produce crops that are both profitable and environmentally progressive.<sup>1</sup> These dedicated bio-fuel energy crops will help Vermont to sustain its agricultural development and support its rural economy.

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To date, bio-fuels have mainly been used for thermal energy needs like indoor heating systems. In the North American market, they are most frequently used as secondary space heaters much like conventional wood stoves, but instead of burning chopped wood, these "pellet stoves" burn bio-fuel pellets. With the recent increase in fossil fuel prices, demand for bio-fuel pellets is growing more than 15% a year. Across the nation, appliance manufacturers cannot keep up with the demand for pellet-stoves; early buying programs have emptied inventories and new orders are already backlogged for more than 12 weeks. This year, it is predicted that consumers will purchase more than 500,000 tons of bio-fuel pellets in the Northeast alone.<sup>2</sup> Wood pellets are cur-

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<sup>1</sup> We anticipate that farmers who grow dedicated energy crops will be able to yield 5 tons per acre and we estimate that they will be paid \$65 - \$85 per ton for these energy crops. Thus, even at the lowest estimates, dedicated grass energy crops will provide a better financial return than high-maintenance crops like soybeans.

<sup>2</sup> The Northeast Region, as defined by the Pellet Fuel Institute, is comprised of Connecticut, Delaware, Massachusetts, Maine, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, and Vermont.

rently the most common bio-fuel pellets on the market, but the increased demand for them, coupled with a sawdust shortage, has led to steep price increases that have significantly reduced their affordability. Bio-fuel producers and distributors are already looking beyond wood pellets to consider bio-fuels made from lower-cost, biomass materials like a sustainable grass crop.<sup>3</sup>

Grass is an ideal bio-fuel because it is an easy, inexpensive, and low-risk perennial crop. While wood pellet prices have sharply increased, grass bio-fuels have the potential to be widely available and easily renewable and, therefore, will enjoy much greater price stability. As consumers continue to transition to bio-fuels, grass pellets will play a key role in meeting the market's growing demands.

And the market for bio-fuels will only grow and expand! As local, state and federal governments initiate policies to promote the switch to carbon-neutral energy sources, it is anticipated that bio-fuels will be used not only in secondary space heaters, like pellet-stoves, but also in whole building heating systems, like bio-fuel furnaces. It is projected that the move to bio-fuel furnaces will result in at least a four-fold increase in pellet demand! Already this year, for example, there is a pilot bio-fuel furnace program in development at Vermont Technical College that will be used to develop bio-fuel heating programs for Vermont's smaller public schools. The demand for bio-fuels and for bio-fuel stoves and appliances is clear; dedicated bio-fuel farmers can anticipate strong demand for their crops!

Today, Vermonters have the opportunity to take advantage of the strong demand for bio-fuel pellets. Growing dedicated grass-energy crops will require adjustments and changes from current haying practices; farmers will have to concentrate on maximum tonnage of fiber per acre rather than greatest amount of nutrient per acre, and real attention will have to be paid to the quality, type and use of fertilizers. But, in both the short and long term, dedicated grass energy crops will produce not only increased profits but also improved soil tilth.<sup>4</sup>

Working together, we can be sure that Vermont's dedicated grass energy crops will provide us with a new means to support sustainable agricultural development, expand rural economic activity and keep our fields open!

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<sup>3</sup> Wood pellet prices in the past year have increased at a rate even faster than oil. This is only one of the reasons why it makes sense to transition away from wood pellets towards a more affordable biomass material like a sustainable grass crop. To learn more about the difference between wood pellets and grass pellets, please consult The Grass Energy Collaborative's working paper which is available at [www.jockgill.com](http://www.jockgill.com)

<sup>4</sup> For more information about the agricultural benefits of grass farming, please consult the forthcoming *Farm Energy Handbook* or The Grass Energy Collaborative's working paper which is available at [www.jockgill.com](http://www.jockgill.com)