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Challenge or Opportunity:

After installing over 100 wood pellet boilers of ever increasing size in buildings all over New Hampshire and Vermont during the prior 5 years, interest began to wane among prospective clients. The reason was obvious—the prices of fuel oil and propane were dropping to lows not seen in 20 years.

This was the first time that bulk contracts for oil were slightly lower than contracts for the equivalent amount of bulk wood pellets. Nobody knew how long these low prices would last, but all the same, our old cost justification models were out the window. This was especially frustrating because the price of wood pellets had stayed nearly the same for 10 years while fuel oil and propane had been on a roller coaster of extreme price changes for decades. Plus, pellets are a NH made fuel. 95% of their cost stays in NH! Aren't people more loyal than this?

No they aren't. A clear lesson that we learned in our years in this business is being "green" is interesting to clients but saving green (money) gets them to act!

The bottom line: Our business was at risk.

Approach or Solution:

Every few years Mark Froling, the President of Froling Energy, visits energy trade shows in Europe where he sees the latest in biomass boiler technology. Good ideas that have not yet arrived in the US are plentiful and there he became aware of a fairly basic biomass fuel that could make a big difference in New England—the dry wood chip.

Dry wood chips are green wood chips that are re-chipped down to a smaller, more regular size and then put through a dryer to reduce their moisture content to 25%. Word from Europe was that dry chips burn as cleanly as pellets in the same larger pellet boilers that we were already installing, but with some fairly inexpensive modifications.

A little background: Many large schools and campuses in New Hampshire and Vermont have green chip boilers that were installed over the last 20 years. Green chips are fresh cut trees, chipped up and

burned. Green chips have a moisture content of between 40% and over 50% (very wet!) but they are inexpensive to buy. Burning green chips requires big, expensive boilers, material handling systems and pollution control devices. As a result they are practical only with very big heat loads. On the other hand, wood pellets have about 7% moisture and they burn very cleanly in modestly priced boilers designed for them.

Our dilemma: Our clients were too small for green chip systems and pellet systems could not be cost justified. So Mark decided it was the right time to invest in a plant to produce dry wood chips.

In mid-2014 Froling Energy moved to the site of an abandoned transfer station in north Peterborough and set up the first dry chip manufacturing plant in the US. We call them PDCs for Precision Dry Wood Chips.

That summer our Project Manager Toby Wells and his new wife Kelley flew out to California to buy and drive back across America in a used Volvo box truck which had been set up to blow mulch into gardens through hoses. Their honeymoon trip back to NH was filled with breakdowns and funny stories to tell but they made it! Finally, with lots of modifications and loving care, we had our first blower truck able to deliver PDCs through a 5" pipe into interior dry chip storage silos.

Impact:

During our first winter, using locally sourced green wood chips, we made over 1200 tons of PDCs which we delivered to heat a private school campus and a manufacturing facility. Then, last winter, a much warmer one, we made 2000 tons to heat 2 schools and 2 manufacturing facilities.

2000 tons = the offsetting of the burning of about 187,000 gallons of fuel oil.

The cost of PDCs nets out to about \$1.28 a gallon. But with the new NH Thermal RECs (Renewable Energy Credits) applied, PDCs have a net cost of about 80 cents a gallon!

This year 75% of our new boiler installations are being set up to burn PDCs. Had we not decided to make PDCs, business would have probably been quite bad. On the contrary, Froling Energy is doing very well. We are upgrading our drying process this summer and expect to produce and deliver over 3000 tons of PDCs this winter. And our PDC customers couldn't be happier!

Email this document to michelle@nhbsr.org by August 31, 2016!