



September 7, 2023

State of New Hampshire
Department of Energy
21 S. Fruit St. Suite 10
Concord, NH 03301-2429

Re: REF Public Comments

Dear Ms. Carmody,

I am writing to make comments specifically about pellet boiler rebates. Tarm Biomass is a New Hampshire importer and distributor of wood, wood pellet, and wood chip boilers. We were the first company in the United States to provide pellet boilers that had bulk-filling capability. We were also the first company to introduce fully automatic pellet boilers to the United States market. As the owner of Tarm Biomass, I have a unique perspective about wood fuels due to the breadth of our product range and multi-decade experience in the industry.

First, I would like to address what will likely be opposition to continuation of any rebates for pellet heating equipment. Some have a patently false belief that wood burning is not carbon dioxide beneficial compared to fossil fuels. There is a recent philosophy that asserts that an atmospheric carbon tipping point ("emergency") means that we do not have time to wait for the tree that was just burned to grow back and recapture the carbon released from combustion. The philosophy further contends that because we don't have enough time, wood burning is no longer carbon neutral or beneficial and is actually worse than fossil fuels. This way of thinking is nonsense for many reasons:

- 1) There is no sign that global atmospheric carbon concentrations are decreasing. On the contrary, global atmospheric concentrations are increasing at an increasing rate. As much as I wish it was not true, it is folly to think that humanity will solve the carbon problem in five to 10 years. Pragmatists know that it is more likely that atmospheric carbon concentrations will not be below 350 PPM (the magic number for some), for many decades. Therefore wood heating remains a valid carbon reducing alternative to fossil fuels.
- 2) When a tree is cut, we do not have to wait for a tree to grow in its place to recapture the lost carbon. Trees are growing all the time. On a landscape basis, forest carbon is stable with harvest and re-growth in balance. If there is any instability, it is from complete forest loss to agricultural and developmental uses. Wood used for fuel has not for almost 100 years reduced forest carbon levels. Today, wood used for fuel in heating is definitely not reducing forest carbon levels. Therefore, wood fuel is nearly carbon neutral.
- 3) Anything we can do to increase the value of wood, such as using waste wood and culled trees during harvest will increase the value of forests compared to the value of the land without trees. Using wood for fuel adds value to trees and therefore forests.

Rebates should continue because wood burning is carbon beneficial.

Comments, **residential** pellet boiler rebate:

- The program is about 10 years old, but the rebate cap has not changed while the cumulative cost of inflation results in systems costing about 40% more. I would like to see the rebate cap increased to maintain effectiveness given inflation. A \$14,000 or \$15,000 cap is recommended.
- The rebate was initially designed for bulk delivered wood pellets only. The intent was to encourage building out the bulk pellet delivery infrastructure using European markets as an example. While there was early growth in the bulk wood pellet industry, recently there has been consolidation of delivery companies. There is now predominantly one company in New Hampshire, Lyme Green Heat, serving New Hampshire. Maine Energy Systems serves limited portions of Northern New Hampshire. Lyme Green Heat and Maine Energy Systems have a very close relationship, so there is little competition for fuel delivery between the two. Most customers therefore face a bulk wood pellet fuel monopoly. There is also no promise that further mills with bulk loading capability will be added.

Many of our customers would like to buy bagged fuel by the ton from their local supplier rather than buying bulk from Lyme Green Heat. Consumers are often turned away from pellet boilers by bulk fuel disadvantages which are: Bulk fuel bins take a large amount of space inside a home. Bulk fuel storage equipment and installation is expensive to the point that bulk fuel storage itself consumes a large portion of the pellet boiler rebate.

When the State requires bulk pellet systems as a key requirement of its rebate, it is primarily supporting one fuel supplier for New Hampshire customers, Lyme Green Heat. To be clear, we are not indicting Lyme Green Heat. We are also equipment suppliers to Lyme Green Heat and fully support all that they do in the industry, but it is not reasonable for the State to stand behind one supplier or one pellet fueling concept by requiring only bulk delivered fuel in order to be eligible for rebates. I see no little if any evidence that initial goals of making bulk wood pellet fuel totally mainstream is working via rebates. If the State truly wants to increase wood pellet fuel use and to do so fairly, it will provide rebates for both bulk-fueled and non-bulk fueled wood pellet central heat. I therefore recommend that bulk fuel capability no longer be a requirement of the rebate program. If the State wants to encourage bulk fuel use, it should do so with an adder that moves the needle.

- We would like the State to incentivize other residential wood burning central heating products to include cordwood burning boilers. When the rebate program was established, cordwood boilers were not regulated. Today they are regulated for emissions by EPA. It is not a stretch to say that when all energy inputs and emissions are calculated, today's wood burning boilers use wood fuel with efficiency and emissions results that are on par with wood pellet boilers. If New Hampshire wants more wood utilization, its current pellet boiler incentive could be tailored differently to include all solid wood fuels and if so, the program will offset higher amounts of fossil fuels. Apart from the desire to create more Renewable Energy Credits, which the residential pellet boiler rebate program does not do anyway, I do not understand why pellet boilers can receive a rebate, but not an equally efficient and clean burning wood boiler. The State should consider adding EPA certified wood burning boilers to the rebate offering along with non-bulk fed pellet boilers.
- The comment solicitation letter notes that "a core function of the programs funded out of the REF: (is to) incentivize the installation of new renewable facilities that enables New Hampshire to continue to meet its increasing RPS goals." HB233 allows The Department of Energy to consider alternate heat output verifications for wood-fueled boilers. We recommend that the DOE allow for pellet fuel receipts as a surrogate for heat

metering. Each ton of wood fuel nets about 3.25 Megawatts of thermal energy, conservatively. I believe that the sample size of metered pellet boilers operating in New Hampshire and the length of time they have operated, taken together with fuel purchase records will support my claim.

The math looks like this:

Btu/ton of wood pellets = 16,000,000
Low efficiency pellet boiler = 70%
.7 x 16,000,000 = 11,200,000
1 kWh = 3412 Btu
1MWh= 1000 x 3412 = 3,412,000
11,200,000 / 3,412,000 = 3.28 MWh/ton

I ask that the DOE take up this possibility as a tangent to working on the rebate program.

Comments, **commercial** pellet boiler rebate:

- I believe that commercial wood pellet boilers are dropping in interest for one major reason. First, an assumption: I assume based on our own sales that most rebated "commercial" pellet boilers were actually installed by municipalities. A highly influential force behind the adoption of municipal wood pellet boilers has been town energy committees. Some members of energy committees are strong believers in the above-mentioned false philosophy about the relation of wood energy to the climate emergency. For that reason, Energy Committees are recommending that towns do not install wood-fueled equipment. Other less important factors are 1) That there is now zero competition for bulk wood pellet suppliers and that makes people nervous. 2) Costs for commercial pellet boiler installations, like residential installations have risen approximately 40%, but the rebate parameters remain unchanged. 3) One major installer of commercial wood pellet burning equipment, Froling Energy, is also now a supplier of dry wood chips. They may rather sell their own fuel rather than installing equipment that will be filled with fuel from their wood pellet fuel competitor. That means that some installations that may have applied for a commercial wood pellet boiler rebate may not be applying at all.
- Because heat metering commercial pellet boilers is highly beneficial to the owner of the equipment through sales of T-RECs, it is surprising that a rebate and T-RECS cannot induce more installations. Increasing the rebate cap to accommodate inflation will help. It may not offset the negative influence of misguided energy committee members at the municipal level. However, for commercial interests, a higher percentage rebate and cap are important. The cap for the commercial rebate is actually higher as a percentage of typical job costs than the residential program. Therefore, to induce sales, a higher rebate percentage of 50% is recommended. I recommend the cap increase to \$75,000.
- If the State would like to move program money from commercial wood pellet boilers to another use, I suggest moving the funds to the residential program and opening up the residential program to EPA certified wood boilers as well as all pellet boilers, bulk fed and bag fed.



I sincerely appreciate that you have taken time to read and consider my comments. I have been trying to imagine the large number of comments your office must sift through. It's a big job. If there is anything more I can do to help, please do reach out.

Feeling good about wood,

A handwritten signature in black ink, appearing to read 'Scott W. Nichols', written in a cursive style.

Scott W. Nichols