

Suzanne MacDonald, Chair
Board of Directors, Efficiency Maine
168 Capitol St Ste 1, Augusta, ME 04330



Re: Maintaining support for pellet heating

Jonathan T. Parrott, President
BioThermal Energy Council
97A Exchange St., Portland, ME 04101

June 30, 2024

Dear Madam Chair,

I am writing to you today on behalf of the BioThermal Energy Council which represents renewable thermal interests across North America. It is with considerable concern that I read the recent publication of Triennial Plan VI relevant to Fiscal Years 2026-2028 (Issued June 5) presented as a draft overview of recommendations for public comments. In particular, I take issue with section 5.4, Home Energy Savings Program (page 35) where the fourth finding bullet reads as follows:

“Pellet boiler/furnace measure in homes does not screen cost-effective and frustrates near-term goals for "gross" carbon reductions. Staff recommends discontinuing the measure, concentrating available RGGI funds on weatherization. (Biomass measures in non-residential buildings will remain eligible through other programs.)”

It is my assessment and that of numerous other stakeholders that the authors of this segment are not sufficiently familiar with wood heating chemistry or the provenance of pellet fuel feedstocks. At risk of prophesizing, I ask that you think back to chemistry class where we learned that carbon as an atom, for reasons of chemical stability, is at rest when bonded with a pair of oxygen atoms. As such, carbon dioxide requires energy (sunlight) for its photosynthetic disassociation (plants retain the carbon as a building block and release oxygen to the atmosphere). However, this sequestration is both tenuous and temporary as the carbon would prefer the company of its departed oxygen partners. The inconvenient truth is that wood is only the passing home for carbon, and its unavoidable decomposition (biological or thermal) will return the CO₂ to our atmosphere. In short, the suggestion that use of a renewable fuel such as pellets for heating frustrates “gross” carbon reductions is scientifically false. The carbon emission was unavoidable.

Pellets are made entirely of wood, the vast majority of which is small-dimensional waste wood (sawdust, mill waste) often referred to as “residuals”. Because of the high surface area to volume ratio this material is extremely conducive to rotting and as such will bioremediate (release its carbon) within the year. Therefore, using this wood as heating fuel does not release any more carbon (gross) to the air of Maine than would have been liberated by allowing the sawdust an alternative fate (rotting). Further, unlike purposefully harvested trees being used for fuel, it is not appropriate to apply a lifecycle analysis to this fiber; suggesting a need to account for regrowth is not scientifically meritorious. It is also worth noting that these two oxidative, decomposition processes release exactly the same amount of heat energy (same covalent bonds are broken). Using the sawdust’s stored solar energy to offset fossil fuels is without a doubt

meritorious of public support. In light of the importance of eliminating the use of gas & oil, it is simply unconscionable to waste local, renewable energy as sawdust & chips are allowed to rot.

I would like to also to address the notion that modern wood heating pellet boilers/furnaces do not screen as cost effective. I can only surmise that Efficiency Maine's algorithm is sensitive to the (comparatively) higher installation cost of this renewable heating technology. I propose that Efficiency Maine adopt true cost accounting and reflect that pellet boilers/furnaces have a 30-year warranty, ensuring three decades of decarbonization. By contrast heat pumps typically carry a 10-year projected lifespan. Should Efficiency Maine reflect total system benefit (lifetime) I am confident that the cost-effectiveness equation would show a different finding. Limiting the benefit calculus to 18 years (ASHPs) and 25 years (pellet boilers) is both inaccurate and inequitably measures the GHG benefits of more durable technologies. Why would pellet boilers carry 30-year warranties if they could only deliver benefits for 25? I am convinced that Efficiency Maine's cost screening algorithm will produce different results by more accurately calculating the carbon offset of pellets and recognizing that modern wood heating systems deliver many more years of virtuous heat than ASHPs.

The data are as follows:

- 1 ton of pellets \pm 120 gallons of heating oil (16.5MMBtu)
- 1 ton of pellets avoids \sim 2,600 lbs. of heating oil CO₂ emissions (EIA data, 2024)
- An average Maine home heating with pellets offsets \sim 10 tons of CO₂ emissions
- Pellet boilers are granted \$6,000 from Efficiency Maine and are warranted for 30 years
- Resulting in 300 tons of lifetime CO₂ offsets @ \$20 per ton
 - ★ Far less than Efficiency Maine's stated \$250 value of carbon

- Passenger cars in Maine average 14,215 miles/yr. (Fed. Highway Administration -2023)
- Passenger cars emit 400 grams of CO₂ per mile (US EPA)
- Passenger cars in Maine emit 6.27 tons of CO₂ per year
 - ★ Each pellet boiler in Maine equates to removing \sim 1.5 cars off Maine's roads

As previously mentioned, pellet heating is unquestionably virtuous as decarbonization strategy. In contrast to electricity (heat pump fuel) wood is a 100% local, renewable material substantively removed from the fossil and fracking industries. It is worth noting that in 2020 ISO NE (our grid manager) published that only 19% of its delivered power across New England was renewably generated. Regrettably this sector includes waste-to-energy (trash burning). I do not oppose heat pumps but feel strongly that we should recognize that their fuel (electricity) is far from ideal. I believe we can all agree that climate change presents a real threat to Mainers. To mitigate this danger, we must equitably deploy all tools at our disposal as a collage of solutions. Supporting the installation of modern pellet heating technologies is worth the investment.

Sincerely,
Jonathan T. Parrott, Ph.D.

