

To: Vermont Public Utility Commission and Clean Heat Standard Technical Advisory Group
From: Stuart Blood, Thetford Center, VT
Re: 23-2220-RULE, Proceeding to Design the Potential Clean Heat Standard
Date: 26 September 2024

Comment on lifecycle emissions accounting for wood burning

The value of clean heat credits generated by the burning of wood should be based on the full, undiscounted EPA emissions factor assigned to “Wood and Wood Residuals” in its *Emission Factors for Greenhouse Gas Inventories*.

The Clean Heat Standard was provisionally established by the Affordable Heat Act of 2023 (AHA) to reduce Vermont’s greenhouse gas emissions from the thermal sector. The AHA requires that, “Clean heat credits shall be based on the accurate and verifiable lifecycle CO₂e emission reductions in Vermont’s thermal sector...”

The AHA further requires that, “The value of the clean heat credits for fuels shall be the lifecycle CO₂e emissions of the fuel use that is avoided, minus the lifecycle CO₂e emissions of the fuel that is used instead.” It establishes “advanced wood heating” as an one of the “eligible clean heat measures.”

According to the U.S. EPA¹, burning wood emits about the same amount of CO₂ per unit of thermal energy as burning coal and far more than other fossil fuels. When burned to generate electricity, wood emits more CO₂ per kilowatt-hour than even coal because of the relative efficiencies of the burners. See for example Sterman et al.² The immediate effect of wood burning, therefore, is to increase CO₂ in the atmosphere, the primary driver of climate change.

Life cycle analysis considers forest regrowth, of course, but regrowth is not guaranteed. In any case, life cycle analysis must take into account that forest regrowth takes decades to more than a century, while Vermont’s Global Warming Solutions Act (GWSA) requires huge reductions in emissions within the next 25 years.

Any analysis based on a “life cycle” several times longer than the time remaining to mitigate the climate crisis is spurious and does not serve to inform a Global Warming Solutions process.

It is logically consistent with the GWSA and the AHA, therefore, that the value of clean heat credits generated by the burning of wood must be based on the full, undiscounted EPA emissions factor.

¹ https://www.epa.gov/sites/default/files/2021-04/documents/emission-factors_apr2021.pdf

² John Sterman, William Moomaw, Juliette N. Rooney-Varga & Lori Siegel (2022) Does wood bioenergy help or harm the climate?, *Bulletin of the Atomic Scientists*, 78:3, 128-138, DOI: 10.1080/00963402.2022.2062933