VT Sierra Club Testimony on the Clean Heat Standard, H.715
Senate Natural Resources Committee
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Chairman Bray, committee members, thank you for the opportunity to join you today to share these thoughts on the Clean Heat Standard. We know the climate crisis is going to demand bold and creative thinking, and this innovative effort is certainly that.

The Vermont Sierra Club is not opposing this bill, but we are not yet prepared to say we support it. I'd like to share what we feel are a few of its strengths, and then address our concerns, and offer recommendations about how to address those in the bill.

BENEFITS OF THE CLEAN HEAT STANDARD

1. The CHS establishes a system of reporting, accountability, and greenhouse gas reduction for this sector, which includes previously unregulated fuels. We know this has to be all hands on deck, so involving the purveyors of liquid fuels here is a big step forward.

2. There is important language calling for life cycle accounting of thermal energy sources. We have advocated for years for correcting our flawed system of assessing our impact on the planet. The devil is in the details, though, and it's critical that the PUC and TAG follow through, and also that we bring our assessment of the electric sector on board.

3. Establishes a third party, independent thermal energy efficiency utility (the default provider), to facilitate clean heat measures. While some might see this as a rarely used function, we suspect that the many smaller fuel importers around Vermont will find the Default Provider as essential in maintaining their participation.

4. Establishes a strong start at equity provisions, including the Equity Advisory Group, which hopefully will become stronger through use as the process proceeds. We congratulate the Climate Council for providing guidance on this, and the House Energy and Technology Committee for taking the time to build this into the Clean Heat Standard process.

So, that's the good news. Now, in the short time I have here today, I'd like to identify a number of areas where we feel this bill still needs work.

RECOMMENDATIONS FOR IMPROVEMENT

- *Specific language for H.715 in italics*

1. **BIOENERGY FUELS: a matter of scale.** Bioenergy refers to biomass, the solid fuels like wood pellets, biofuels, such as biodiesel or other fuel additives, and so-called renewable natural gas (RNG). wWithout the time to go into detail here, I'll just state that at smaller scales, bio energy fuels can be just fine, truly sustainable, but at larger scales, they can be devastating. We recommend three elements of change in the bill: an additional Finding, a clarification of the charge to the Technical Advisory Group, and finally, a requirement that the PUC establish appropriate limits on the use of bioenergy sources.

    a. Include, as **Finding #6**, "*that bio-energy fuels, such as renewable natural gas, corn-based ethanol, biodiesel, and wood, demonstrate a wide range of potential greenhouse gas benefit, from worse than zero to very helpful. Other non-GHG impacts, such as forest loss, competition for agricultural land between energy crops and food crops, and localized community or ecosystem impacts, may be minimal at smaller scales, but they become substantial as these technologies are brought to larger scales.*"

    b. The Technical Advisory Group, or TAG, is charged, among other things, with exploring the sustainability of clean heat measures. We feel this term is vague and undefined. TheTAG should be responsible for a **comprehensive study of the impacts of scaling up biofuels, biomass energy, and RNG**, including the following:
        i. What is the potential for scaling up the various forms of bioenergy fuels?
        ii. For each of the many bioenergy pathways, what are the impacts in terms of ecosystem transformation or loss, competing land uses, impacts on food supply, and on local human communities and natural communities or resources; and how do these impacts evolve as bioenergy use increases here in VT and nationally?
        iii. What is the potentially available supply, and impacts of that, for bio-energy development within Vermont, and then beyond our borders?
        iv. What environmental controls are in place that would ensure the impacts, not just from Vermont but from cumulative demand around the US, are limited to acceptable levels?
        v. In the case of renewable natural gas, what are the potential sources? In the context of RNG that is connected to the VT delivery system by a "contractual pathway," what is included in this source region? What is the overall potential in terms of quantity of RNG supply of various types, in light of an increasing demand for RNG throughout the US and Canada (and even exports to Europe)? What controls are in place to assure appropriately limited impacts? This includes impacts on water, air, and nearby communities, and in particular frontline communities with higher numbers of lower income or BIPOC individuals.
        vi. What is the potential for competition for land between energy crops and food crops, and the impact on the price of food? Climate change analysis already demonstrates a shrinking food supply with higher prices; how will this interact with a growing demand for energy crops? This assessment should include the indirect impacts through which an increased use of land for energy crops ripples through the global system and influences

even remote changes, such as conversion of rainforest to palm oil plantation.

vii. Identify potential parameters and guidelines for setting acceptable limits on the scaling up of the various forms of bioenergy fuels.

c. **Require the PUC to set enforceable limits** on the scaling up of bioenergy, to ensure that impacts do not exceed an acceptable level.

i. The TAG shall recommend to PUC, and the PUC shall establish, enforceable limits on the scaling up the use of biofuels, biomass, and RNG, for thermal energy, to ensure sustainability.

2. **Clean Heat Investment Balance.** The legislation and PUC should mandate a balance**,** between "low carbon fuels" and efficiency technology improvements, strongly emphasizing technology investment measures.
   a. There has been conjecture about how much the economics and practical operation of the system will favor either bioenergy purchases or real investments in heat-saving measures.
   b. The fuels choice is easy, it is a short term cost that's easily passed along to consumers, but it perpetuates dependence; efficiency has a higher upfront cost but ongoing benefit, with ongoing bill reductions. This is especially significant for renters.
   c. The PUC should ensure that the LMI investment carve-out (16% for Low Income, 16% for Moderate Income) be in the form of efficiency and other fossil fuel-reducing technology, which reduces ongoing costs, and not fuels, which perpetuate dependence.
   d. Ideally, a prescribed balance will be based on a well-modeled pathway that achieves required GHG reductions. We suggest no more than 25% in bioenergy, 75% in thermal efficiency measures.

3. **Life Cycle Analysis.** 8124 (b) states, "Clean heat credits shall be based on the lifecycle CO2e emission reductions that result from the delivery of eligible clean heat measures to end-use customer locations in or into Vermont."
   a. This should be clarified by adding *"including the life-cycle emission assessment for the electricity that powers clean heat measures. The values used in determining the effectiveness of clean heat measures shall not include renewable energy credits or any renewable energy attributes that are sold to another party."*

4. **Credit Trading System.** This could use a more thorough exploration.
   a. **How will the credit market work**? Will it be easy for any obligated party to readily access the credits they are required to retire through the market, or through a central credit exchange? What are the secondary market challenges? How will credits be bought and sold? How will this affect the price of credits, and ultimately cost to the consumer? Is there a need for specific authority for the PUC to regulate such a system, how will this interact with any other regional systems that develop?
   b. **Banking** represents a challenge that can distort the markets and frustrate implementation; it should be very limited in scale, as a total percent of a year's credits (50%), as a percent of annual credits that an be applied in a year (10%), and in terms of how long credits can be stored before they expire (5 years).

c. **Early Action Credits.** Accruing credits now, before the system credit requirements are in place, will suppress clean heat investment once the system kicks off. There should be a better way to incentivize or require efficiency measures prior to the 26% by 2025 GWSA reduction requirement date. Without a well grounded program of LCA and non-GHG impact protection, no early credit should be granted for the use of bioenergy. Banking in general is especially problematic if it is not clear that any party, whether OP, public entity, or client, owns the credits of a measure in proportion to the dollars they invested.
d. Under no circumstances should unbundled attributes from nuclear power be eligible for clean heat credits, or as a component of the assessed electricity portfolio.

5. **Who Owns the Credits?**
   a. [bottom of p. 14] "8124(g) All eligible clean heat measures that are delivered in Vermont shall be eligible for clean heat credits and may be retired and count towards an obligated party's emission reduction obligations, regardless of who creates or delivers them and regardless of whether their creation or delivery was required by other State policies and programs. This includes individual initiatives, emission reductions resulting from the State's energy efficiency programs, the low-income weatherization program, and the Renewable Energy Standard Tier 3 program." We feel this is confusing at best.
      i. Credits should be owned by the entity that provided the funding, whether that is the obligated party, the weatherization fund or other public source, the client/homeowner, or even a private party providing funding.
      ii. Any of those owners should have the ability to sell or retire the credits they have created through their investment in clean heat.
   b. **Tier 3 investments or any required by other State policies and programs** should not count toward both Tier 3, etc., and as Clean Heat Credits. This double dipping dilutes the value of both, or eliminates the value of Tier 3 and the other programs.
   c. Recommended substitute language: "*8124(g) All eligible clean heat measures that are delivered in Vermont shall be eligible for clean heat credits and may be retired and count towards an obligated party's emission reduction obligations, regardless of who creates or delivers them. This includes individual initiatives, emission reductions resulting from the State's energy efficiency programs and the low-income weatherization program. Credits should be owned by the entity that provided the funding, whether that is the obligated party, the weatherization fund or other public source, the client/homeowner, or other directly investing party.*"

6. E**conomic impacts**. It is important to acknowledge that there will be a cost. If importers/dealers are required to implement efficiency, etc. those costs will be translated into prices for residential, commercial, and industrial consumers. How will this impact consumers? Will the impact be felt differently by different classes of consumers?
   a. H.715 requires the PUC to identify the linear path of reductions of GHG to achieve the required GHG reduction levels, and then to allocate credit

requirements to achieve these reductions among the obligated parties. At the same time, the effectiveness of clean heat measures should be reducing the quantity of fossil fuel sold. Assuming the cost of creating credits will not go down over the years, and the amount of sales over which an OP might spread those costs among consumers, what will happen to the total price for those consumers?

7. **Conflicts of Interest**
    a. The "**Default Provider**" is likely to become a very important and valuable part of this system, yet there is little structure or guidance for the Default Provider.
        i. *Obligated Parties shall not be eligible to serve as the default provider.*

    b. **Technical Advisory Group**. *Obligated parties should not be members of the TAG or part of its decision making.* They should be expected to play an advisory role. *The make-up of the TAG shall be carefully based on the high level skill and knowledge base demanded for this group, not a set of political interests. Membership shall be composed of individuals with these skill sets:*
        i. Modeling skills necessary for evaluating and utilizing life cycle assessment of clean heat measures
        ii. Interdisciplinary computer scientist
        iii. Technical assessment of clean heat technology
        iv. High level of understanding of implementation for clean heat programs
        v. Awareness and assessment of non-greenhouse gas impacts of upstream bioenergy feedstocks, such as with food systems, ecosystems, direct and indirect land use impacts, and human communities
        vi. Detailed familiarity with existing Vermont programs that support clean heat
        vii. Legal skills in the energy field to properly align the work of the TAG with the clean heat regulatory environment
        viii. Other skills required for the proper carrying out of TAG responsibilities

8. **Consumer Protection,** Truth in Advertising:
    a. Full disclosure about the clean heat credits should be clearly communicated to the consumer, in advertising, on proposals/bids, on the bill.
    b. *The PUC shall develop a standard form that works both in online form and on paper and which includes: amount of GHG reduction (CO2e) is attributable to this sale, the credit value according to PUC schedule, the dollar value of the credits, who owns the credit, where the credit goes (will it be retired, sold, etc.), along with other information gathered under 8124 (h)(2).*

Continued thoughts…

ADDITIONALITY

VIEW 1: Avoid double counting of greenhouse gas reductions, whether with one jurisdiction's measures, or in more than one jurisdiction at a time.

- Article 6 of the Paris Agreement, "shall apply robust accounting to ensure, inter alia, the avoidance of double counting,..."
- H.715: the TAG is charged with, "§8125(a)(5) establishing credit values for each year over a clean heat measure's life, including adjustments to account for increasing interactions between clean heat measures over time so as to not double-count emission reductions;"

VIEW 2: In terms of specific measures or programs, additionality means net greenhouse gas (GHG) emissions savings or sequestration benefits in excess of those that would have arisen anyway in the absence of a given activity or project. Sometimes referred to as the "but for" test; GHG benefits would not have occurred but for the measures taken. This is often applied in consideration of carbon offset projects, or energy from older facilities that do not add anything new to the system.

VIEW 3 (this is the one that ties it together and really counts): In the context of the global carbon cycle, balancing mitigation and sequestration on the one hand with decomposition, respiration, and combustion on the other, measures are considered additional if they provide a net benefit for the system, increasing the amount of carbon stored in aquatic and terrestrial systems compared with the amount stored in the atmosphere.

Clean Heat Standard Resources

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Dr. Rachel Smolker, Biofuelwatch, Resources on Biomass Energy, https://www.biofuelwatch.org.uk/biomass-resources/resources-on-biomass/

NRDC, Pipe Dream or Climate Solution

WRI Report, Avoiding Bioenergy competition for food crops and land, executive summary with policy recommendations, https://www.wri.org/research/avoiding-bioenergy-competition-food-crops-and-land

Searchinger, et al, Use of U.S. Croplands for Biofuels Increases Greenhouse Gasses Through Emissions from Land-Use Change, https://www.researchgate.net/publication/326450544_Use_of_US_Croplands_for_Biofuels_Increases_Greenhouse_Gases_Through_Emissions_from_Land-Use_Change

Tom Cyrs and John Feldman, World Resources Institute, 7 Things to know about Renewable Natural Gas, https://www.greenbiz.com/article/7-things-know-about-renewable-natural-gas

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Inside Climate News, Corn-Based Ethanol May Be Worse For the Climate Than Gasoline, a New Study Finds, https://insideclimatenews.org/news/16022022/corn-ethanol-gasoline-climate-change/

Union of Concerned Scientists, Land Use Changes and Biofuels, https://www.ucsusa.org/resources/land-use-changes-and-biofuels

Harvard School of Public Health, Environmental Research Letters, Negative impacts of burning natural gas and biomass have surpassed coal generation in many states https://www.hsph.harvard.edu/c-change/news/gas-biomass/