

Testimony on S.5 at Senate Committee on Natural Resources and Energy

Secretary Julie Moore, Vermont Agency of Natural Resources
January 26, 2023

Good morning.

Thank you for the opportunity to return to committee this morning and more hard conversation.

I see a Clean Heat Standard as a potentially powerful approach for addressing one of the most challenging and most significant sectors of Vermont's greenhouse gas emissions.

But I also see it as imperative to separate the policy kernel from the process and timeline presented in S.5.

This is a massive and complex undertaking with real costs and practical challenges.

It is essential to complete the work needed to understand, account for, and develop workable strategies that appropriately distribute the costs and impacts of the Clean Heat Standard before it is enacted.

Absent this, I can't support this policy, say nothing of making the case to my boss that this is a good idea.

So, I am here again today to implore you to proceed in a manner that leads to data-informed and durable climate policy.

Specifically, I see the following as tenants of good government that need to be fully considered throughout the process of crafting policy:

- **Data informed**
 - What data is needed for this work? And, of that, what data exists?
- **Administrative clarity and sustainability**
 - How are clean heat credits calculated?
 - Why would anyone sign up to be the default delivery agent?
- **Minimize impacts and maximize benefits to low- and moderate-income Vermonters**
 - What steps are needed to ensure policy is consistent with GWSA directive to “to prioritize the **most cost-effective**, technologically feasible, and **equitable** greenhouse gas emissions reduction pathways and adaptation and preparedness strategies **informed by scientific and technical expertise.**”
- **Public engagement/procedural equity**
 - How is procedural equity and meaningful opportunities for local communities to participate in program planning and design being folded into the consideration of the Clean Heat Standards?
 - The public engagement by the Climate Council in developing the Climate Action Plan cannot be viewed as a substitute for public engagement specific to a Clean Heat Standard.

I am also concerned that the PUC has not been in to testify and share their perspective as they play the central role in much of this work.

In the testimony you have taken over the last two weeks on S.5 a number of witnesses have spoken about the benefits of a Clean Heat Standard which are real and most notably include significant, long-term savings for Vermonters transitioning from fossil fuel-based to clean heat solutions.

But just as real as the \$6.4 billion in estimated long-term savings, not to mention the reduction in GHG emission, the upfront costs of this work are also real.

The benefits come with a cost.

Data informed

Unfortunately, the analysis and modeling needed to dig into the costs has not been done in any real detail. The best information currently available is the Pathways Report that was developed for the Climate Council.

The Pathways Report provides scenario modeling that is beneficial for visualizing the scale and pace of transformation necessary to achieve emissions reductions. And it includes information on the costs and savings by sector over time but does not go further.

The green line on this graph shows the “net value” at points in time, which is the difference between the expenses that have been incurred and the savings that have been realized.

The area under the curve - shown in red hatching - represents the upfront cost to Vermonters – largely capital investments in things like heat pumps and weatherization that will be paid back over time with savings from reduce energy consumption and lower cost fuels.

While the actual impact on individual pocketbooks will vary, what you should take from this graph is that the near-term costs are 100s of millions of dollars. And these costs will need to be actively managed for the policy to yield the long-term benefits.

I used the GWSA requirements and numbers pulled from the Pathways Report, to develop a rough estimate of the gap between currently available revenue and projected costs to give some sense for the impact of this policy. And I endeavored to make conservative/generous assumptions throughout...

- 145,000 heat pumps @ \$5000 each = \$725 million
- 85,000 homes weatherized @ \$10,500 each = \$890 million
- 125,000 heat pump water heaters @\$3,000 each = \$375 million

TOTAL COST (01/01/26 – 12/31/30) \$2 billion (no administrative costs included)

- Efficiency Vermont incentives for these activities currently average 75% for low- and middle-income Vermonters
 - Given the pace and scale envisioned by S.5, it is reasonable to assume that a higher level of incentive will be required to ensure uptake.

- Also assume 90% cost-share will be needed to ensure pace to 2030.
 - Passive incentives may not be sufficient regardless, which would put upward pressure on the administrative costs.
- **Remaining investment needed: \$1.8 billion**
- Assume federal funding programs (ARPA, IIJA, IRA, CDS) provide \$75 million per year (for 8 years) for clean heat measures, including early action credits, or \$600 million.
 - Total needed investment remaining: \$1.2 billion.
- Assume CHS take effect on January 1, 2026:
 - Fuel suppliers will “absorb” (rather than pass along) 25% of the cost of the clean heat credits they are required to generate/obtain.
 - We know from RGGI that the full costs are not being passed on to customers, and would hope for the same here.
 - Total needed investment remaining: \$900 million.
- \$900 million, or roughly \$180 million per year
 - Absent dedicated state revenue, it is reasonable to expect that fuel suppliers will look to raise this revenue from fuel sales.
- Vermont sells about 250 million gallons of fossil heating fuels per year.
 - Clean Heat Standard as currently envisioned could initially raise the price of a gallon of heating fuel by 70-cents per gallon.
 - As the amount of fuel consumed annually in Vermont drops over time (as a result of the CHS), the adder on remaining fuel sales will inevitably increase.

I got my professional start in water quality modeling... and my boss used to regularly remind me “all models are wrong, some models are useful.”

I could easily be off by a factor of two here... but I think the “order of magnitude” context is also important.

If you are offended by my back-of-the-envelope math, and frankly it is perfectly reasonable for you to be, I encourage you to see this as making the case for the time and resources needed for modeling and analysis to generate better numbers.

The bullets here are taken from the 2021 report coming out of Act 62, the report recommended increasing the fuel tax to expand low-income weatherization, not dissimilar to what is needed as part of the Clean Heat Standard.

My understanding was the recommendation was not advanced is in large part over concerns of the hardship this might create for low-income Vermonters.

And we don't currently have the ability to consider how the costs of a Clean Heat Standard can and should be distributed. But just because we don't currently have the ability, it doesn't mean the costs don't exist.

It feels disingenuous not to have this work be part of the upfront work and engagement that is needed with the larger Vermont community.

I am also eyes wide open that my math is just the costs, not the benefits. Early adopters will benefit immediately. Over time the number of beneficiaries will grow, but it is important to remain mindful of the growing impact on those who have not yet made the transition.

Beyond the more detailed modeling and analysis needed related to the costs and benefits of a Clean Heat Standard, I see several other critical data gaps that need to be addressed before the policy is implemented:

- Fuel data
 - Currently, Tax collects aggregate data on “Number of GALLONS of heating oil, propane, kerosene, and other dyed diesel fuel delivered in Vermont” (Form FGR-615).
 - Impacts ability to establish/appropriately value clean heat credits.
- Regulatory relationship with “obligated entities”
 - Unlike Vermont’s electricity utilities that have a long-standing engagement with the PUC, this regulatory relationship will be new to the fuel suppliers, and it is reasonable to expect some initial challenges.
- Last customer problem
 - How do we adequately consider the needs not only of the early-adopters, but also those later to make the transition – inevitably, someone will be last.
- Rate of deployment of clean heat measures
 - Can this be achieved thru passive incentives?
 - Does this allow comprehensive, whole-home solutions?

Administrative complexity

- Clean Heat Credits
 - Calculating clean heat credits
 - Have you had anyone try to apply the methodology outlined in S.5? One of ANR’s technical staff did was unable to work it through. We need to prove out what is envisioned in S.5 and adjust to make it useable.
 - Establishing system for tracking clean heat credits
 - It is no small undertaking to track the work of multiple partners and appears to be well-outside the scope of the current budget.
 - I encourage you to hear from AAFM on the partners database they have created to help coordinate work across a similarly diverse universe of implementors.
 - Verifying early action credits
 - Important, but challenging given that there are no current standards for the work.
- Carbon intensity of fuels

- Additional layer of complexity, and unclear whether it is consistent with the assumptions around biofuels that the Pathways Analysis relied on in considering feasibility.

Equitable distribution of clean heat measures

- S.5 requires at least 32% clean heat measures to go to low- and moderate-income customers.
- I am not clear how this percentage was arrived at.
- Data from the Tax Department utilizing 2021 returns and using the fairly standard definition of moderate income at 120% of MHI... 71% of Vermont filers are below this threshold.
 - For me this again highlights the importance of undertaking more detailed analysis needed related to the costs and benefits.

Public engagement procedural equity

S.5 allows 16 months (August 31, 2023 - January 15, 2025) for the PUC to:

- Conduct pre-rulemaking engagement with stakeholders
- Draft rules
- Formally solicit and address public comments
- Prepare and submit final proposed rules to the implement the Clean Heat Standard to the General Assembly

This is a really condensed timeframe for a rulemaking that essential needs to come from “whole cloth” and seems inconsistent with the both the Guiding Principles developed by the Just Transitions Subcommittee and the directives contained in Act 154 – the State Environmental Justice Policy – that was passed last session and emphasizes meaningful participation.

Closing Remarks

In closing, I want to acknowledge how challenging this is. More than challenging. It is hard; I might even go so far as to say ridiculously hard.

I care deeply about climate action, and both professionally and personally, I have serious concerns about process and timeline, and the ramifications this will have on our ability to drive sustained, meaningful climate action in Vermont.

The Clean Heat Standard is complex policy. I see establishing a Clean Heat Standard as akin to the creation of Efficiency Vermont in 2000 – it is a broad-based, largely untested elsewhere and deserves a thorough vetting.

The potential benefits of this policy are real, as are the costs to Vermonters. But so far, the conversation has focused heavily on the benefits and the opportunities, largely glossing over the challenges and the costs. In order to be successful, we need to be talking about all of it.

Since the Legislature was unable to override the Governor’s veto last session, staff have continued to work – methodically – to fill in critical gaps, to answer my questions, and the Governor’s, about the impact this will have on Vermonters.

And as they have dug in, they have found things we didn't know we didn't know.

Put another way, I don't see any of this work as "another study" – but rather the work needed to have confidence our actions are in the best interests of Vermonters.

Further, this work is being done in parallel with accelerating implementation of clean heat measures. We are taking full advantage of significant federal funding to drive climate action – weatherization, home panel upgrades, whole-home energy retrofits, heat pump incentives.

This is not an either/or where the needed transformation will stall absent the immediate adoption of a Clean Heat Standard.

The Administration's approach is preparing for the long game. Taking the steps foundational to Vermont's ability to decarbonize by 2050.

You have indicated in your comments, to other witnesses, that you find this measured approach inconsistent with the urgency of the moment and therefore unacceptable.

I believe this measured approach is good government – implementing policy in thoughtful steps to the end goal – which hard, often complex and demands time.

As Eleanor Roosevelt once said: *"...we seem to forget that democracy functions by taking one step at a time. As more people become convinced of the value of something, it becomes more universally accepted. Democracies move slowly because they envision the approval of a majority for any new policy, and that means much education of many individuals."*

Ultimately, the policy solution may be some form of Clean Heat standard. But the process and timeline in S.5 do not leave room for "much education of many individuals." This is a disservice to Vermonters. I do not agree with and cannot support this approach.

The Governor's Plan

Continuing to do the work needed to develop a program that works for everyone.

Federal funding gives us time to build capacity while to effectively plan, engage Vermonters, and truly understand the benefits and the costs.