350VT testimony to Senate Natural Resource and Environment Committee
on S.5 Affordable Heating Affordable on Feb 8 @ 9:30am
presented by Andrea Stander, Montpellier, Vermont

Good morning and thank you for this opportunity to testify on S.5, the Affordable Heating Act (AHA), and for all your work on creating a Just Energy Transition for Vermont. My name is Andrea Stander. I live in Montpelier and am a long time member of 350VT, a former Board member, and a current volunteer with our Just Transition Campaign Team. Some of you also know me as a former Executive Director and Policy Consultant for Rural Vermont.

I have the honor of speaking to you today as a representative of the membership of 350VT to share our concerns about and suggestions for the AHA. Statewide, we have over 5000 members. We have nine community-based membership “nodes" representing most areas of the state with over 80 volunteers serving on five leadership teams.

Dozens of these community leaders, many with their own experience and expertise in energy policy, have dedicated hundreds of hours over the last year to understanding the issues addressed by this legislation, talking to experts, and participating in forums and community discussions.

350VT is also an active member of the Act on Climate and the Vermont Renews coalitions and we have been in vigorous conversation with all the other Vermont organizations who are addressing the climate crisis as part of their work. We know it is going to take all of us.

In this testimony I hope to answer the following questions for you:

- What does 350VT propose as alternative solutions for reducing greenhouse gas emissions from our heating sector?
- What are 350VT's concerns about the solutions proposed in the AHA?
- Why does grassroots participation in the creation of public policy matter?
- Who is 350VT and why do we care about the AHA?

For your reference, 350VT will submit this testimony electronically later today, along with some suggested amendment language and supporting materials, for inclusion in the public record.

Real solutions we would like to see:

1. Accelerate the transition away from combusting fuels for heating by focusing on weatherization, installing heat pumps, and helping Vermonters reduce their energy consumption. As we focus on electrification and weatherization, continue the use of current heating fuels rather than cause oil and propane costs to increase as fuel dealers pass costs to customers, causing new harms, without actually reducing emissions.

   For example:

   - Do not bring biofuels or renewable natural gas into Vermont. Emissions reductions from these fuels are minimal or non-existent. Human and ecological impacts are known, destructive, and unjust.

   - Do not allow hydrogen for clean heat credits. Most hydrogen today is made using fossil fuels. "Green" hydrogen is a limited, precious resource that should only be produced and used on-site for the heavy industries hardest to decarbonize. Green hydrogen leaks easily and contributes to greenhouse gas warming.

2. Direct the PUC to deny contracts that involve awarding credits for, or importing combustible fuels not yet used in Vermont that can cause additional harms to people and ecosystems.

3. Pass the new Renewable Energy Standard bill.
   Clean up Vermont's electric supply so that electrification of heating actually reduces emissions

4. Pass an electric ratepayer protection provision that helps Vermonters afford their electric bills now and helps them make the choices needed to transition to electrification heating solutions.

5. Instruct the PUC to authorize Thermal Energy Networks in Vermont to enable a pathway for implementing this clean heating solution.

What are 350VT's Concerns about the AHA?

Biofuels

Last year, when you considered the Clean Heat Standard, 350VT asked you to take the concerns of Vermonters into account by addressing the climate, ecological, social, and economic impacts of biofuels as part of a clean heat standard. As a result, this year's legislation attempts to address this by requiring the methods used to measure Greenhouse Gas emissions include fugitive emissions (i.e. gas leaks), as appropriate for the pathways of distribution and use in Vermont. We are grateful for this change in the bill. However, we don't see the carbon intensity classifications for biofuels as sufficient for reducing the environmental and economic harms from liquid biofuels and so-called Renewable Natural Gas or RNG. So there is more work to do.

The current version of the AHA contains provisions that do not address many of the concerns our members have expressed. These current provisions would:

- Allow a further increase in carbon emissions through the production, transportation, storage, and combustion of biofuels

- Lead to greater ecological destruction of natural systems we depend on, such as deforestation and the loss of critical agricultural land caused by the production biofuels (such as palm oil) instead of growing food here in Vermont and globally
- Add more harm to Indigenous, Black and Brown and other vulnerable communities here and across the globe who are already bearing the greatest burden from the climate crisis.

The AHA strongly incentivizes increasing the use of specific biofuels for heating in Vermont. While some especially dirty fuel sources are not allowed, the amount of solid, liquid, or gaseous biofuels is not constrained in this bill. And there are two problems with having no limits on biofuels:

- The first is the money we will be spending out of state on biofuels could be used to permanently lower our energy use and costs by investing in weatherization and energy-efficient heat pumps in Vermont homes and businesses. However, any expenditures on the liquid or gaseous biofuels decreases the availability of funds that could be used for energy conservation and efficiency.

- The second problem with having an AHA that includes biofuels is that the true impacts on greenhouse gas (GHG) emissions and people's lives and ecosystems are unaccounted for in this bill and they are devastating. If the methods proposed to estimate them in the AHA were able to account for all the indirect and downstream GHG emissions, all industrially produced biofuels would be recognized as at least as destructive and dangerous as the fossil fuels they are being incentivized to replace.

Available liquid biofuels that would be blended with heating oil are derived from agricultural oils and fats that are traded globally. Even used cooking oil is now being traded globally. Unfortunately, increasing demand for any agricultural oils, drives up demand for the cheapest oil: palm oil. Our use in Vermont of California or Midwest produced oils will drive up palm oil production in the tropics. There, it causes

devastating impacts on greenhouse gas emissions, biodiversity and indigenous lives through massive deforestation, mono-cropping, and illegal land grabs. These additional impacts are not accounted for in the AHA, but the increased demand it creates for biofuels will increase the costs of the blended fuel oil incentivized by the AHA.

What about Renewable Natural Gas (RNG)?

As our neighboring states of NY and MA have discovered, emissions from Renewable Natural Gas (RNG) processing and pipelines nearly double the GHG emissions of RNG use as a fuel. While the escaping emissions are very difficult to measure because they occur all along the route of long and sometimes buried pipelines, recent efforts have substantially refined these measurements, and the results are alarming. And there is a long list of other impacts on the health of people, soil, and water quality in the vicinity of these facilities and pipelines. Also, ratepayers are being charged a surcharge for the RNG. Other states' regulators have concluded that there is no GHG reduction benefit worthy of the extra costs to consumers. In one of the most egregious giveaways to Vermont Gas Systems (VGS), the AHA has a special protection for RNG. Unlike all other fuels that would count for Clean Heat Credits, RNG does not have to be burned in the State of Vermont to be awarded Clean Heat Credits. This means that the AHA gives Vermont Clean Heat Credit for money spent on RNG production and use well outside of Vermont that is not associated with a reduction of GHG emissions here while increasing emissions elsewhere.

What about Hydrogen and "Green" Hydrogen?

Thank you for agreeing to hear testimony today from Professor Robert Howarth of Cornell University about hydrogen and RNG. Gas companies are planning to blend hydrogen into the gas that's piped to our homes and businesses, saying that it will "decarbonize" the gas system. However the facts show that:

Most hydrogen is not good for the climate. Nearly 100% of hydrogen is made from fossil fuels. Even more fracked gas or coal is needed to make this fossil hydrogen energy than if we used the gas, oil, or coal directly.

No matter what it's made from, hydrogen is an indirect greenhouse gas contributing to warming our planet.
Heating with hydrogen, even green hydrogen, increases rather than lowers emissions. Hydrogen is a highly leaky gas that prolongs the life of other climate-warming emissions and overall is 200 times more warming than carbon dioxide.

Making "green" hydrogen wastes the solar and wind power we need for clean electricity.
Diverting precious renewable energy sources to make hydrogen for blending into "natural" gas in pipelines and for heating buildings is inefficient, more expensive, and requires continued use of fracked gas in pipelines and homes.

Heating and cooking with hydrogen is not safe or healthy.
Hydrogen is much more explosive than "natural" gas and creates almost invisible flames. Burning hydrogen also releases more indoor air pollution than fracked gas.

Heating with hydrogen is not equitable. Using hydrogen for heating means that those unable to afford to electrify their homes will be the ones paying more to burn explosive, polluting gases in their homes.

The Regulatory Assistance Project's meta-review of studies on hydrogen for heating (a *link to this study is provided below*) compiles 33 peer-reviewed independent studies that dismiss the use of hydrogen for heating. Yet another peer-reviewed study with the same conclusions was released a few days ago. RAP tweeted this week about this study, saying, *"Hydrogen for heating is a distraction: inefficient, costly & resource-intensive. This is what ALL independent studies conclude."* NY and MA are following the science and turning away from hydrogen as a clean heat possibility. It's far too expensive and inefficient to compete with heat pumps.

The AHA bill treats hydrogen like a heat pump as an end use and makes it eligible for clean heat credits. This opens the door to blending hydrogen in pipes and combusting it in buildings. Are you absolutely sure that the bill will *only* allow hydrogen to be produced and used on-site for the hardest-to-decarbonize heavy industrial processes?

Will it prevent hydrogen from being piped, blended and burned in our homes and businesses? Let's not make the mistake of allowing it in Vermont.
Is heating homes with hydrogen all but a pipe dream? An evidence review

Will the AHA create affordability?

Low and moderate income Vermonters constitute approximately 64% of our state's population. As a recently retired senior citizen living on a very fixed income, I count myself in that number. I live in a small apartment in a large and very heat leaky Victorian era building with six other tenants. The entire building is heated by one oil-fired furnace. Although heat is included in our rent, we have no individual control over the heat in our apartments and we all pay for our own electricity. Our landlord is struggling to finance required health and safety improvements, so needed weatherization is low on his priority list.

This bill has been renamed the "Affordable Heating Act." Real affordability comes most immediately from reducing energy use through weatherization and energy efficiency. The AHA ensures that 16% of clean heat credits *must* be from these affordable sources for low and moderate income households. However, to satisfy that 16%, fuel providers are allowed to include all other funding for weatherization and efficiency programs generated outside the mechanisms of the AHA. Therefore, to the extent that the AHA is actually affordable for consumers, its affordability depends on external subsidy programs and is inconsistent with the additionality required of new climate legislation by the Paris Climate Agreement.

Why is Grassroots Participation Essential in Creating Public Policy?

We believe deeply in the importance of grassroots participation by those who will be affected by public policy in the creation of that public policy. The AHA will affect all Vermonters.

Some members of this committee have served in the legislature long enough to have experienced many of the past grassroots campaigns which resulted in ground-breaking

legislation that brought major changes for our state and provided leadership to the country as a whole such as Marriage Equality in 2009; Death with Dignity in 2013; the GMO Right to Know food labeling law in 2014; and Vermont's first meaningful gun control legislation in 2018. These laws would not have been initiated, let alone passed, without the enormous grassroots support of Vermonters who cared deeply about these issues.

Who is 350VT?

To ensure you have an accurate understanding of who 350VT's membership is, it is important for you to know that 350VT is an independent, 501(c)(3) non-profit organization, registered with the State of Vermont. Although we collaborate with 350 International, the organization founded by BIll McKibben, on some national and international issues, we are a separate organization. We follow a distributed leadership model among our small staff and our campaigns are determined by working closely with our members.

Our mission is to help Vermonters respond to the climate crisis with justice and equity. We work to help Vermonters understand and be fairly represented in energy decisions made by the government and businesses on their behalf. Our members are your constituents. They are not experts, but many of our community leaders have devoted hours of their time to read, understand, and discuss in multiple forums and meetings, the complex issues addressed in the AHA. We share a commitment that we do not want Vermont's energy solutions to cause further harm to people, and the ecosystems on which we all depend. We must not create solutions that export our pollution or the costs of our energy use to other communities in the US or anywhere around the globe. That is the historic process which has created the climate crisis now affecting all aspects of our lives.

And here's our hope:

You, we, as Vermonters, have a choice.

Will you choose to embrace a policy that will keep all of us tied to an approach that has been shown, in the past, to be ineffective? Will you choose a policy that asks low-income, often BIPOC communities outside of our borders, to shoulder the burden of our energy use as their farms get turned into pesticide-laden biofuel crops, their water is polluted by yet another feedlot operation or landfill that generates supposedly renewable natural gas, or whose forests are clear cut to grow even more oils to make biofuels so we can heat our homes?

OR will you choose a policy that helps people reduce their energy consumption and energy costs while keeping them warm, incentivizes energy efficiency and heat powered by the sun, wind, and earth's base temperature via distributed geothermal networks? Will you invest in our communities and a resilient future for all Vermonters, one that does not sacrifice our responsibility as global citizens to resist the continued exploitation of land, ecosystems, and indigenous communities who have, for too long, borne the brunt of our energy choices?

Many in Vermont acknowledge that five years after it was passed, the Renewable Energy Standard or "RES" needs to be reformed because it includes sources of energy that are still polluting and it de-incentivizes the kind of low-emissions renewable energy we truly need: affordable solar and wind power produced in-state that will create jobs, keep our money in Vermont, and truly lower our greenhouse gas emissions.

We understand this isn't an easy choice given the political climate in which you must work. However, it is the right choice to make at this pivotal time and your constituents ask you to make it. You can do that by keeping biofuels and all hydrogen out of the Affordable Heating Act and making Vermont the state that leads the way in creating a truly clean and just heating future for all who live and work here. Thank you.