Testimony as Prepared for Delivery
Jared Duval, Member, Vermont Climate Council
Senate Natural Resources & Energy Committee
March 30, 2022

I. Introduction

Thank you Chair Bray and members of the committee. For the record, my name is Jared Duval. While I have previously joined this committee in my role as Executive Director of the non-profit Energy Action Network, today I am joining you in my role as a member of the Vermont Climate Council. I was appointed to the Council by the Senate to provide expertise related to energy and data analysis. On the Council I serve as Co-Chair of the Science & Data subcommittee, a member of the Cross-Sector Mitigation subcommittee, and as a member of the Council Steering Committee. The distinction between my EAN and Council roles is important because neither EAN the non-profit nor EAN the network as a whole take positions on specific bills before the legislature.

However, speaking as a member of the Vermont Climate Council and a co-author of Vermont's Climate Action Plan, I need to be clear about the recommendations that are in the Climate Action Plan and what legislative action it requires if we are to have confidence that we can meet Vermont's legal requirements under the Global Warming Solutions Act—and our moral obligations—regarding emissions reduction and an equitable energy transition.

As a Council, we spent over a year looking at different policy options. I want to start by saying why the Clean Heat Standard rose to the top for many Council members.

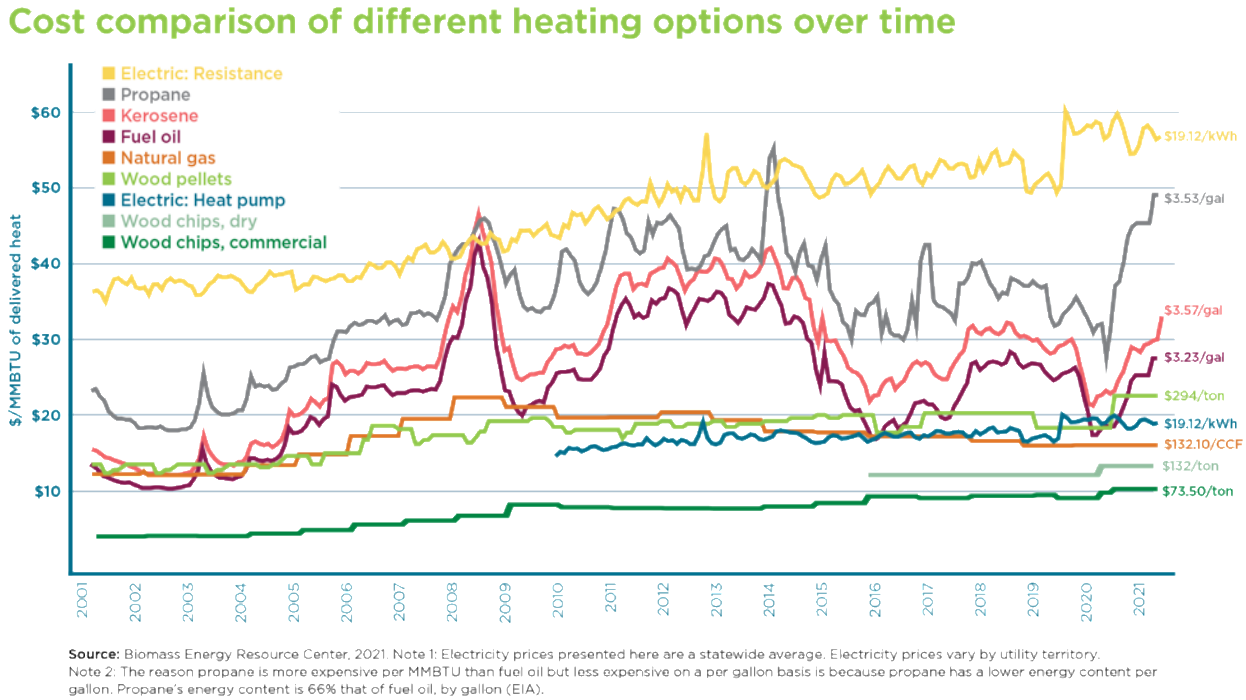
There are many considerations that go into good climate and energy policy, but **what was front and center for me and many other Councilors is this: the interconnected need to significantly reducing climate pollution while also equitably lowering energy costs for Vermonters, especially low- and middle-income Vermonters.**

And **the common problem, whether we are talking about greenhouse gas emissions or the high and unpredictable cost of energy, is dependence on fossil fuels.** Think about it – approximately half of Vermont's heating comes from two of the highest cost and most price volatile fuels – fuel oil and propane. Fuel oil alone is up about $2 a gallon since last year.[1]

There is no way to durably and effectively reduce energy costs as long as we remain so dependent on high cost and price volatile fossil fuels. Thankfully, proven and effective solutions exist – from weatherization to heat pumps to efficient wood heat, all of which are generally much lower cost and more price stable, and also do more to keep dollars local and reinvest in the Vermont economy.

[1] https://publicservice.vermont.gov/content/retail-prices-heating-fuels

Figure 1:



Source: Biomass Energy Resource Center, 2021. Note 1: Electricity prices presented here are a statewide average. Electricity prices vary by utility territory. Note 2: The reason propane is more expensive per MMBTU than fuel oil but less expensive on a per gallon basis is because propane has a lower energy content per gallon. Propane's energy content is 66% that of fuel oil, by gallon (EIA).

So, the idea behind the Clean Heat Standard is two-fold:

1) Hold fossil fuel companies accountable for reducing pollution and

2) Lower the heating costs of Vermonters by helping reduce fossil fuel dependence and making fossil fuel companies help pay for things like weatherization, heat pump water heaters, heat pumps, and efficient wood heating.

As the Clean Heat Standard has gained attention, much is being said and written about it – including a significant amount of inaccurate or misinformation. So, I would like to focus the next part of my testimony on stating what the Clean Heat Standard actually is – and then speak to what it is not.

II. Summary of What the Clean Heat Standard Is:

1) The Clean Heat Standard is designed to **increase access to and further reduce the cost of clean heating options.**

2) The Clean Heat Standard is the **largest and most important policy recommendation regarding emissions reduction in the Climate Action Plan** adopted by the Council. The thermal sector is responsible for over a third of Vermont's greenhouse gas emissions. Other policy options considered would have been more costly and have provided less flexibility to Vermonters. And if the Clean Heat Standard is not passed this session to help ensure we meet our legally required emissions reductions, the Council and Agency

of Natural Resources will almost certainly be forced to default to using authority to impose regulations that provide less flexibility and are more costly.

3) The Clean Heat Standard is a performance standard that **requires fossil fuel suppliers to act to reduce pollution** and to invest in providing, either directly or indirectly, cleaner heating options for their customers.

4) The Clean Heat Standard is designed to ensure that the **benefits and cost savings of clean heat options are prioritized for and progressively serving low- and middle-income Vermonters**.

III. What the Clean Heat Standard Is Not:

And now let me focus on what it is not.

1) The Clean Heat Standard is not designed to increase the price of fossil fuels. Again, it is designed to increase the availability and decrease the cost of clean heating options. The question is, who should be held responsible for making that happen, including who should bear any cost of doing so? There is a long-standing principle in economics known as the "polluter pays" principle, and that is why the requirement is focused on fossil fuel companies. Any cost of compliance is meant to be borne by the fossil fuel companies. If they push that cost onto consumers, that is the decision of fossil fuel companies – not the intent of the Climate Council or the Clean Heat Standard.

   Right now, we are only requiring our electric utilities to pay for emissions reductions. This increases the cost of electricity—our cleanest fuel—when we should be doing the opposite: making electrification, from electric vehicles to heat pumps, as affordable as possible to reduce climate pollution as fast as possible. To make markets work and reflect the true social cost of climate pollution, we need to reduce the cost of clean and efficient energy while using the "polluter pays principle"—and that requires money from fossil fuel companies.

   Because fossil fuel suppliers have avoided reporting and accountability for so long, we don't actually know who all the importers and first sellers of fossil fuel into Vermont are. But we have some information. The list includes companies that operate oil terminals in Vermont, like Irving Oil does in Rutland. The ownership of Irving Oil has a net worth, as reported by Forbes Magazine, of over $4 billion.[2]

   There is no reason that phenomenally wealthy fossil fuel corporations like Irving Oil should push their cost of complying with pollution reduction standards onto consumers—and we should explore ways to ensure that they don't.

   Thankfully, while Vermont is considering this Clean Heat Standard, the U.S. Congress is set to begin hearings on price gouging by oil companies. Additionally, multiple U.S. Senators, including Sen. Sanders, have recently introduced legislation for a windfall profits tax on oil

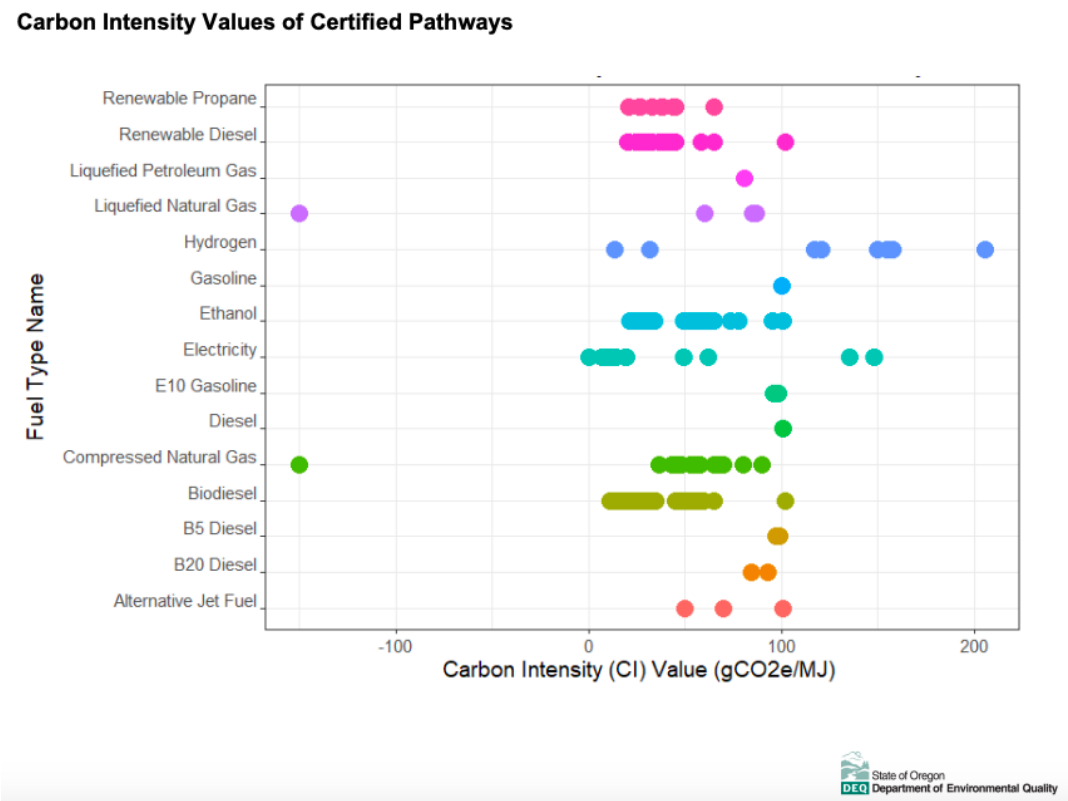
[2] As a privately owned rather than publicly traded company, it is difficult to find accurate reports on the profits of Irving Oil as a company, which is why I list the net worth of its ownership here instead.

companies. The revenue from that windfall profits tax is proposed to go to a 4th stimulus check, estimated to provide about $360 per U.S. household,[3] which would help offset the latest spike in fossil fuel prices.

Those measures can help in the short term. But, in the mid to long term, we also know that there is no durable and effective path to reducing heating costs until we reduce dependence on high cost, price-volatile fossil fuels and until we reduce our exposure to global commodity markets for oil that are largely controlled by cartels and autocrats that abuse human rights and undermine democracy. If we don't hold fossil fuel companies responsible for reducing pollution and paying for the transition, who should we hold responsible?

2) The Clean Heat Standard does not require or promote the use of biofuels. Biofuels are simply an eligible measure, *so long as they meet sustainability criteria and actually reduce emissions on a lifecycle basis compared to fossil fuels, subject to transparent and rigorous assessment*. It should also be emphasized that those biofuels that do not actually reduce emissions as measured on a lifecycle basis will simply not be eligible for clean heat credits. There will not be a lone emissions reduction value for biofuel – there will be many, varying appropriately according to source and production, as seen in the wide range of values present in Oregon's carbon intensity scale.

Figure 2: Example of Oregon's Carbon Intensity Scale for Clean Fuels Program (Transportation) Compliance



[3] See https://newrepublic.com/article/165807/oil-windfall-profits-tax-fossil-fuels-give-money-people

Those biofuels that meet the sustainability criteria and that do reduce emissions on a lifecycle basis must be eligible for clean heat credits. If they are not, Vermont will almost certainly see higher fossil fuel use than would otherwise be the case and it would also be more expensive for consumers and businesses to meet our legally required emissions reductions.

Unfortunately, there are no perfect choices when it comes to energy, so there is a need to compare energy options to each other, including biofuels vs. fossil fuels, on a full lifecycle basis. It is not practical or responsible to compare biofuels to an alternative that does not exist.

I wish it were possible to meet all of Vermont's heating needs through weatherization and electrification in the near term without the need for combustion heat. But given our building stock, our climate, and the state of current technology, doing so is simply not possible.

Sustainable biofuels and efficiently used wood heat need to have a role in the Clean Heat Standard and in Vermont's energy transition for practical, legal, resilience-related, and economic reasons. This is not because I believe that biofuels or wood heat are perfect climate solutions – it is because I trust that, with full, rigorous, and transparent lifecycle accounting, many biofuels and wood heating options will be far better than the fossil fuels that would otherwise be used in their stead. And given the choice between locking in more use of heavily polluting, high-cost sources of geologic carbon like fossil fuels versus seriously advancing the transition off fossil fuels, I choose the latter.

The most used thermal energy source in Vermont is fuel oil, which provides about 30 percent of Vermont's home and building heating.[4] While our leading strategies should be weatherization and electrification, we also need to meet Vermonters and fuel dealers where they are and recognize that many oil boilers, furnaces, and water heaters cannot be changed out overnight. While they are still in use, it will be better from a climate perspective to have the option to use less carbon intensive fuels than fossil fuels, as measured on a lifecycle basis.

IV. Response to Inaccurate Statements and Misinformation

Regardless of the actual details of this bill and how carefully it has been crafted, nevertheless we hear opponents of climate action and defenders of the fossil fueled status quo continually circle back to one of three main arguments. I'd also like to address each of these arguments directly.

1) First is the argument that global warming is a hoax or, more specifically, the activity of humans and the burning of fossil fuels is not the cause of the destabilization of the earth's climate.

   I want to quote from the latest Intergovernmental Panel on Climate Change (IPCC) report:

[4] See page 22, https://www.eanvt.org/wp-content/uploads/2021/06/EAN-APR2020-21_finalJune2.pdf

"The scientific evidence is unequivocal: climate change is a threat to human wellbeing and the health of the planet. Any further delay in concerted global action will miss a brief and rapidly closing window to secure a livable future."[5]

Some dismiss climate science by saying things like, "what difference does 1 degree make?" It is worth remembering that climate is different than weather – a one degree difference in global average temperature has profound implications. For instance, with 3 degrees of warming vs 2 degrees, nearly 10% of the world's population – over 640 million people – could be at risk of flooding and inundation from sea level rise.[6] Think about it, the vast majority of the largest population centers in the world are coastal, and most are in less wealthy parts of the world that have historically done the least to cause the climate problem.

The science is clear that the risks and harms from inaction are dangerous and unacceptable, with recent IPCC reports termed a "code red for humanity" and making clear we have less than a decade to cut emissions roughly in half to avoid catastrophic scenarios of global warming.[7] It is not time to act – it is long past time to act.

2) Second is the argument that, since Vermont is small, we either can't make a difference or shouldn't take responsibility for our climate pollution.

   Being small is not an excuse for inaction or not taking responsibility. No state or country can solve the climate crisis on their own. It requires all of us to do as much as we can, wherever and as soon as we can. Most all of us have been part of this problem and so we should all work to be part of the solution. We need to be responsible for reducing our pollution regardless of what is happening elsewhere.

   When we look at the numbers, Vermont actually has the highest per capita greenhouse gas emissions of any state in New England.[8] At about 15 tons per person, Vermont also produces more climate pollution per person than China or India, which have emissions of about 7.4 tons per person and 1.8 tons per person, respectively.[9] And, historically, Vermont has contributed much more, per person, to the problem than many of the places around the world that are seeing and will continue to see the worst effects of a destabilized climate.

   Refusing to act at a time of great generational challenge is not just morally bankrupt, it also goes against our best historical traditions as Vermonters. When civil unions and then marriage equality was under consideration by the legislature, we didn't say, "we shouldn't do this because most gay and lesbian people don't live in Vermont." We did what was right by Vermonters, here in our state, and also provided an example that rippled far beyond our borders, encouraging other states and nations to take up the cause of equality.

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[5] https://www.ipcc.ch/report/ar6/wg2/resources/press/press-release/
[6] https://www.climatecentral.org/news/report-flooded-future-global-vulnerability-to-sea-level-rise-worse-than-previously-understood
[7] See: https://www.bbc.com/news/science-environment-58130705
[8] See page 10, https://www.eanvt.org/wp-content/uploads/2020/03/EAN-report-2020-final.pdf
[9] See: https://data.worldbank.org/indicator/EN.ATM.CO2E.PC?most_recent_value_desc=true

Or during the Civil War, we didn't say, "we're too small to make a difference." No, Vermonters signed up to preserve the Union and help end slavery, playing a decisive role in many battles, from the Wilderness to Gettysburg.

And during the Revolution, when the "shot heard 'round the world" was fired and the first battles at Lexington and Concord broke out, did Vermonters say, "there's no way we can make a difference"? No, Ethan Allen and the Green Mountain Boys bravely took Fort Ticonderoga, securing cannon and mortar that turned the tide of the Revolution in America's favor.

Refusing to act or take responsibility doesn't just go against our history and character, it is also shortsighted. Putting our heads in the sand regarding the harms and costs of fossil fuel dependence is not good for Vermont consumers or the Vermont economy. If we are to protect Vermont consumers from the high costs and volatile prices of 100% imported fossil fuels, we need to hasten the transition to cleaner, lower-cost, and more price stable heating options like heat pumps and efficient wood heat. The Clean Heat Standard will help keep more of our energy dollars local and reinvest in our communities and jobs for our neighbors, while strengthening the Vermont economy. The stone age didn't end because we ran out of stones and the same is true of the oil age – it will be better for Vermont consumers and businesses if we are leaning into the clean energy transition rather than getting left behind.

3) Third is to call anything and everything related to climate action a carbon tax -- regardless of whether it actually is or not. Stated as simply as possible, the Clean Heat Standard is a requirement on fossil fuel companies and is in no way, shape, or form a tax on consumers.

   A tax is when our government collects revenue and then decides how to spend or invest it. The Clean Heat Standard does not collect any revenue, so it is not a tax. It is not even a fee – which is when revenue is collected for a specific purpose, for instance vehicle registration fees that fund the Department of Motor Vehicles.

   The Clean Heat Standard is simply a requirement that fossil fuel companies reduce pollution. Any costs related to meeting that standard are the responsibility of the obligated fossil fuel sellers.

   The closest parallel to this policy that we can look to is Oregon's Clean Fuels Program. Oregon found that for every 5% reduction in emissions, the effect on fossil fuels prices was about a 1% increase,[10] with fossil fuel companies that had to buy credits on the open market increasing the price of fossil fuels 5 to 6 cents per gallon to help them purchase those credits.[11]

   But in that case, it is very important to note that any cent of increase that fossil fuel companies push onto consumers that is related to complying with the performance standard goes toward *lowering the cost of cleaner alternatives*. In Oregon for instance, they have seen

[10] See: https://www.opb.org/article/2021/10/14/oregon-has-a-plan-to-cap-emissions-from-fuels/
[11] See pages 27-28, https://www.oregon.gov/deq/ghgp/Documents/CFP-ProgramReview.pdf

the price of cleaner options like electrification and of biofuels decrease, making those options more available and affordable to more and more consumers.[12]

Here in Vermont, any cent of increase that fossil fuel companies push onto consumers to help pay for Clean Heat credits will go toward lowering the cost of clean heat options. That means more affordable weatherization, heat pumps, efficient wood heat, and sustainable biofuels will be made available to more Vermonters, especially low- and middle-income Vermonters, given the current design of the bill.

V. Other Recommendations:

Overall, I think the bill passed by the House is very good. However, I do think there are some areas that could benefit from further clarification.

1) Given confusion I have heard about the language in subsection 8123 (f)(2), I would suggest clarifying that while the default delivery agent may be a market participant (it would need to be, if they are providing clean heat services), that the default delivery agent "may not be an obligated party."

2) I think H. 715 could be improved by more clearly defining what is meant by "sustainability" and the sustainability criteria for clean heat measures, specifically in subsection 8125 (a)(3).

3) I believe the bill already speaks to it but there may be opportunities to put belts and suspenders on the lifecycle analysis section – specifically articulating that lifecycle analysis and a carbon intensity value should apply to *all* measures, including electricity.

4) It may be beneficial to examine expanding the TAG to bring in other expert voices. Generally speaking, the TAG should primarily be composed of subject matter experts focused on transparent and accurate measurement based on high quality, peer-reviewed evidence and data.

Overall, however, I believe that this is a very good bill as is. And the most important thing – whether from the perspective of legal compliance with the GWSA, whether given the moral urgency of global climate justice, or whether from the perspective of reducing the cost and maximizing the savings of the needed energy transition, is to not delay passage and implementation of this bill beyond this year.

If this bill does not pass and the Clean Heat Standard does not begin to be implemented by the PUC as outlined in H.715, the Climate Action Plan will almost certainly not add up for 2025, let alone 2030, and to meet GWSA legal requirements the Climate Council and Agency of Natural Resources will almost certainly be forced to implement emissions reductions measures of a strictly regulatory nature that will provide less flexibility and incentives, raising concerns about cost-effectiveness and equity.

[12] Ibid. See pages 17-19.

For instance, I expect that if the Clean Heat Standard does not pass, the primary options that will be left available to the Council and Agency of Natural Resources for GWSA compliance will be a biofuel blending requirement – which could lead to higher use of biofuels than would be otherwise be the case with the Clean Heat Standard – and the near-term prohibition of sales of heating equipment that can use fossil fuels.

In closing, I want to quote one of my favorite authors, Rebecca Solnit, who said, "when the perfect is the enemy of the good, not only is it not perfect, it is not even good." There are no perfect choices when it comes to energy, especially given the default position of a deeply harmful and inequitable fossil fueled status quo and the urgency we face regarding the climate crisis. We must not delay needed action to reduce emissions and reduce dependence on fossil fuels any longer. Advancing this carefully considered and very good policy by passing this bill, either in its current form or in a slightly updated and improved form, is the best option Vermont has in the here and now to seriously begin to meet our legal and moral responsibility.