Testimony as Prepared for Delivery
Senate Natural Resources and Energy Committee
Jared Duval, Executive Director, Energy Action Network
May 28, 2020

Thank you Chairman Bray and Senators of the Committee for the opportunity to speak with you today.

My name is Jared Duval and I serve as Executive Director of the Energy Action Network, or EAN. Our Network is comprised of over 200 member organizations, businesses, and public partners all with a shared mission of meeting Vermont's Comprehensive Energy Plan goals and emissions reduction commitments in ways that create a more just, thriving, and sustainable future for Vermonters.

Given the diversity of our Network, in order to serve as a trusted and neutral convener, EAN staff do not lobby on behalf of particular pieces of legislation. Instead, we work to ground Vermont's energy and climate conversation with the best available data and analysis. We do this by collecting data and conducting analysis in coordination with many public partners including the Public Service Department, the Agency of Natural Resources, the Agency of Transportation, the Agency of Commerce and Community Development and many other state, federal, and local experts.

The most tangible and visible result of our data tracking and analysis at the statewide level is our Annual Progress Report for Vermont, the most recent version was just released in March and which is available electronically at eanvt.org.

I want to share with you today the pieces of this report that most directly relate to the Global Warming Solutions Act, three in particular.

First, meeting the emissions reduction targets outlined in this bill is achievable, given proven and available technologies and best practices.

Second, meeting these targets can significantly strengthen Vermont's economy, providing economic revitalization and resiliency when we need it as much ever.

And, finally, the states, provinces, and countries that have made the most progress at simultaneously significantly reducing their emissions and improving their economies have done so with one or both of the following: economy wide caps on greenhouse gas pollution (such as in Quebec and California) and/or binding requirements for GHG reduction targets (such as in Massachusetts and New York). Vermont currently has neither. Over the past 30 years, we have been the worst performing among our neighbors when it comes to achieving emissions reductions.

Let me say more about each of these points.

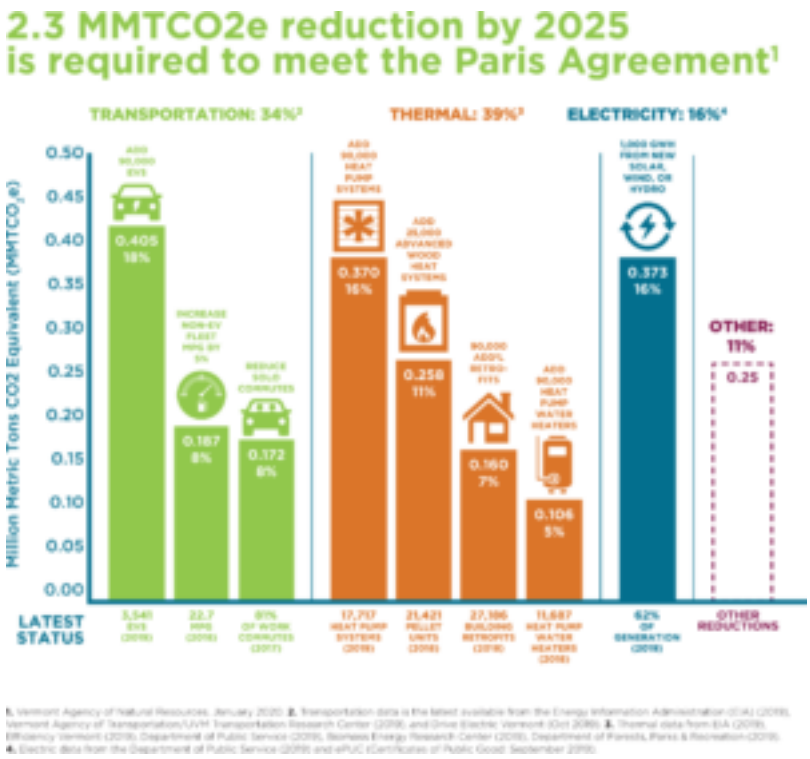
First and most importantly: **the transition off fossil fuels is an economic development and affordability strategy for Vermont**. This topic is particularly important to me because, before I led EAN, I served as Economic Development Director at the Agency of Commerce and Community Development. And it as important as ever as we currently face a shrinking economy and increasing unemployment due to the pandemic.

The economic conversation about energy has for too long been backwards. Often the question will be asked, "how much will it cost us" to move from fossil fuel to efficient, renewable energy use. This report shows that there are three key questions that we should be asking instead:

1) how much is our fossil fuel dependence currently costing Vermonters and the Vermont economy?

2) how much do Vermonters stand to save on energy costs as a result of this transition?; and

3) how will the Vermont economy be affected by a transition off fossil fuels?



To answer these questions, the Vermont Agency of Commerce and Community Development conducted an independent economic impact analysis of EAN's "Path to Paris" model (above). The Path to Paris model takes proven and available technologies and best practices as outlined in

Vermont's Comprehensive Energy Plan and models the scale and pace of efficient and renewable energy adoption, primarily for how we get around and heat our homes and buildings, that will be necessary to meet Vermont's commitment to the Paris Climate Agreement.

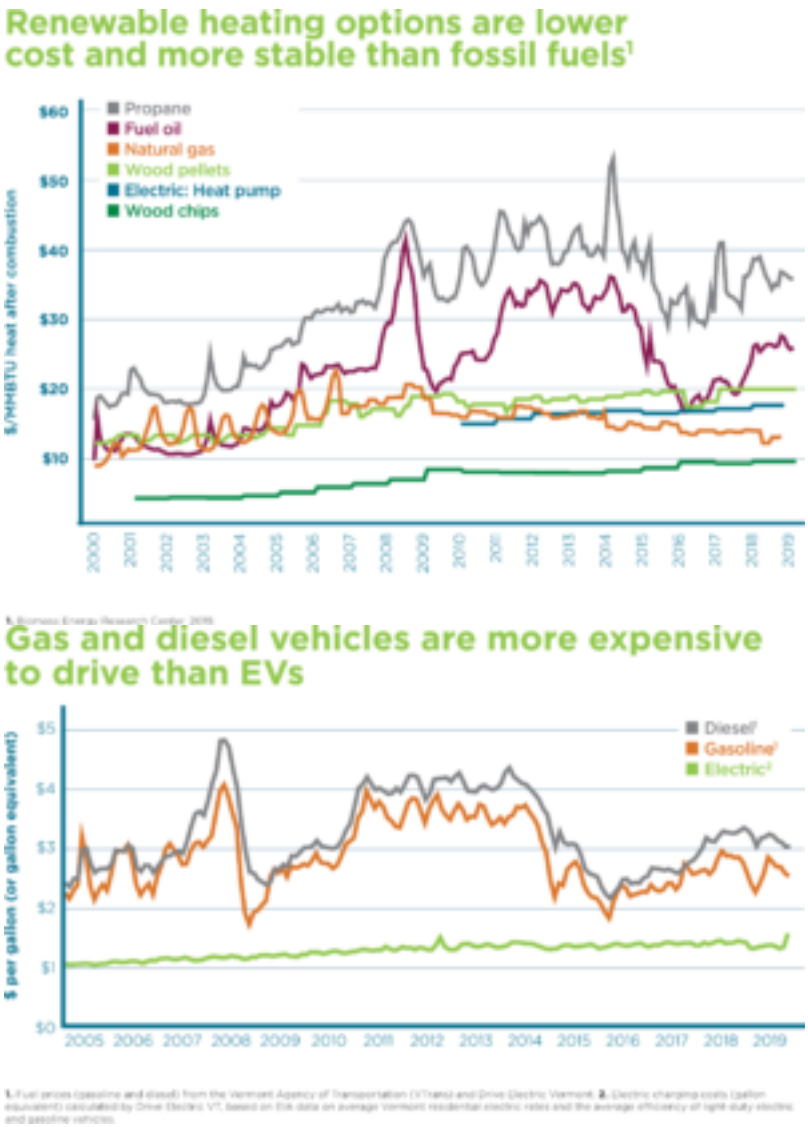
What ACCD found is that if we meet our Paris commitment in this way, it is estimated that we will keep more money in state and Vermonters will keep more money in their pockets. Specifically, ACCD estimates that we can ***reduce the net amount of dollars draining out of the Vermont economy by over $1.1 billion***, **increase net investment in in-state businesses by over $300 million**, and ***save Vermont consumers nearly $800 million between 2020 and 2035***.

This analysis, by ACCD's own admission, is very conservative. For instance, it does not include the value of state incentives in the consumer savings calculations, which can result in significant additional savings for Vermonters who do weatherization projects or install renewable heating systems like advanced wood heating or cold climate heat pumps. It also projects electric vehicle prices to stay at their current levels for the next five years, when we know that battery and EV prices are declining every year. It also projects fossil fuel prices to stay at historically low levels, when we've seen that they have been quite volatile over time. Furthermore, it does not account for other price decreases for clean technologies due to increasing economies of scale or further

technological improvements. Finally, and perhaps most importantly, it doesn't account for the very real costs of climate disruption, or what some refer to as the "social cost of carbon."

Let me state those numbers again: **reducing the flow of dollars out of state by over $1.1 billion dollars, increasing investment in Vermont-based businesses by over $300 million, and achieving net consumer savings for Vermonters of nearly $800 million**. The reasons for this very good economic news lie in two key differences between fossil fuels vs. more efficient, renewable energy alternatives.

First, Vermont averages about $2 billion a year in fossil fuel spending, three quarters of which, or $1.5 billion, drains right out of our state economy. That's only 25 cents of every dollar spent on fossil fuel staying in the Vermont economy. All of the efficient and renewable alternatives keep much more of our energy dollars local: 60 cents of every dollar invested in weatherization, 62 cents of every dollar spent on electricity, and 80 cents of every dollar spent on wood stay local, support jobs for our neighbors, and strengthen the Vermont economy. We understand the benefits of "buy local" in our agriculture and food sector. The same is true when it comes to energy.

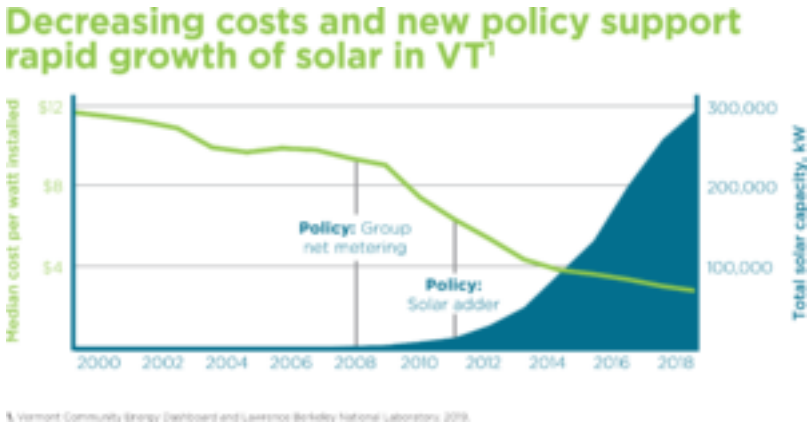


Second, fossil fuels are generally more expensive and have much more volatile prices than electricity and renewable fuels. Over time, the lowest cost way to get around or to heat your home or building with the most stable and predictable prices is with electricity or wood heat.

We have proven, available, and cost-effective solutions to reduce climate pollution and save Vermonters money from transportation and heating. No matter where you live in Vermont and no matter what type of home or building you're trying to heat, there is an efficient and renewably sourced heating technology that can work right now. And there are about three dozen electric vehicle models currently available in Vermont, including ten all-wheel drive options, soon to include pick-up trucks.

While solar, wind, and hydro electricity generation technology have been around for decades, the solutions for how we get around and heat our homes and buildings efficiently without fossil fuels are newer. A big part of this transition will be making sure Vermonters are aware of cleaner, healthier, and more economical ways to get around and heat their homes and buildings. A decade

ago there were fewer than 100 electric vehicles in Vermont and no cold climate heat pumps. As of last year, there are over 3,500 EVs registered in Vermont, over 17,000 heat pump systems, and over 11,000 heat pump water heaters. Those numbers are growing every year and could be the beginnings of a wholesale market transformation, similar to the growth of solar PV… *if we put policies in place to support their adoption and send the right market signals*.



1. Vermont Community Energy Dashboard and Lawrence Berkeley National Laboratory, 2019.

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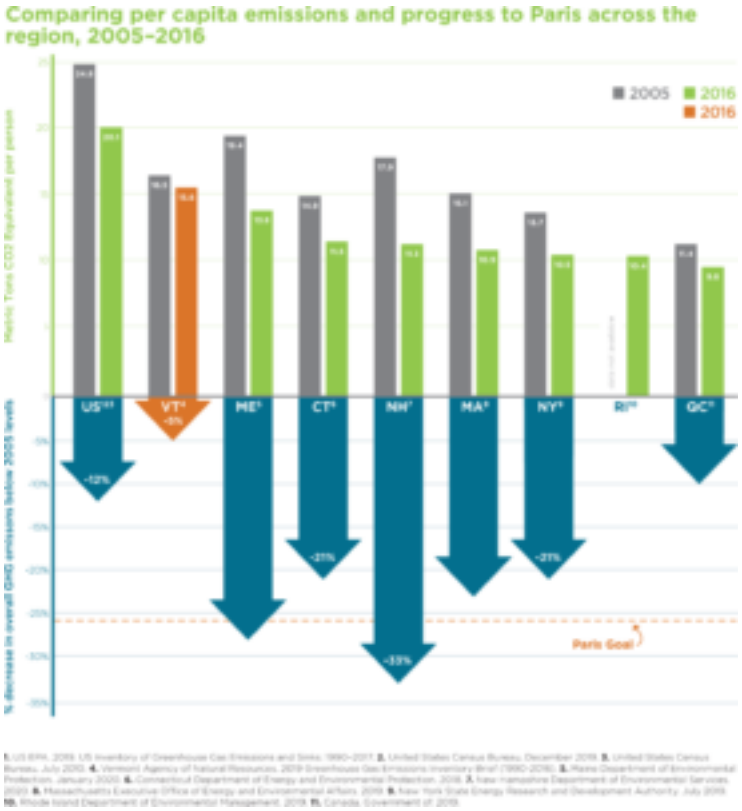
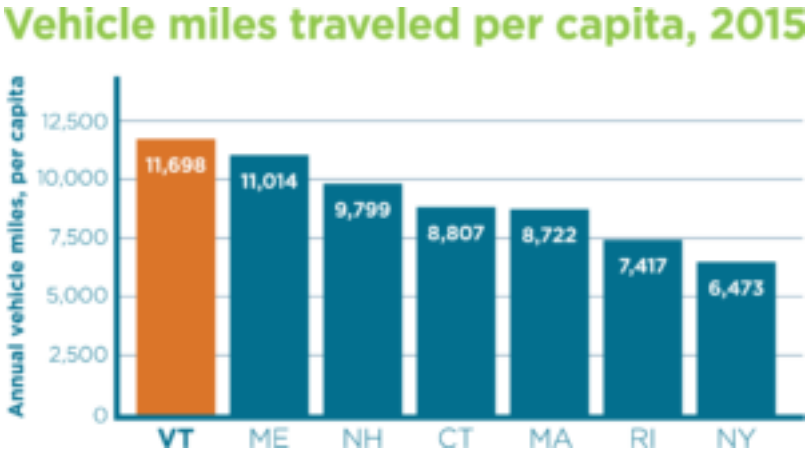
This report also includes a comparison of greenhouse gas emissions from every state in New England plus New York and our neighbor to the north, Quebec. What we found is that:

- Vermont is the only state in the region that has failed to reduce its emissions below 1990 levels.
- Vermont has made the least progress toward the Paris Climate Agreement commitment of any state in the region.
- And Vermont has the highest emissions, per capita, of any state in the region at over 15 tons of greenhouse gases per person.

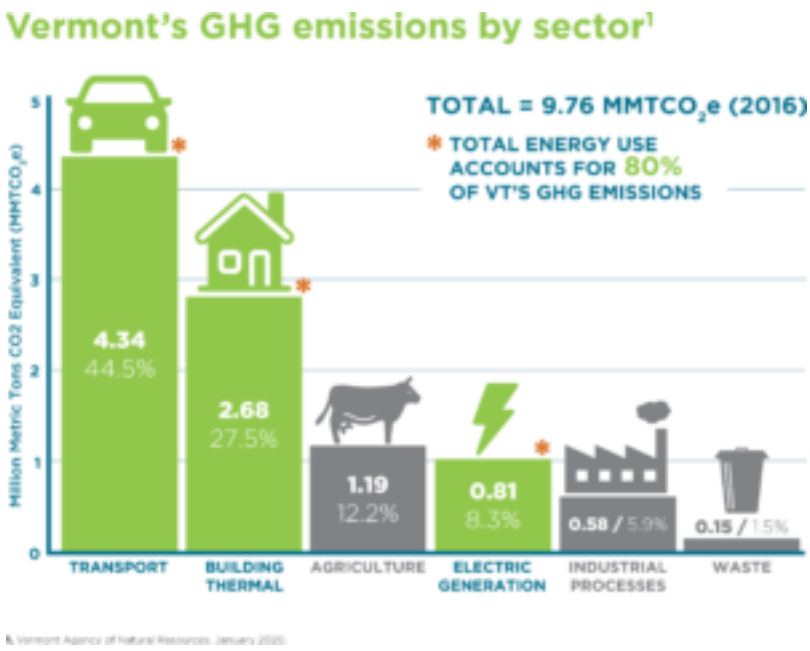


Why is this happening?



One big reason is the increase in our transportation emissions since 1990. There are more vehicle miles traveled in Vermont than any state in the region, and miles driven have been rising since 2014. Additionally, we are not getting the full benefit of increased fuel economy standards because Vermonters who buy or lease new vehicles are opting for bigger and bigger vehicles. In

2012, 55% of new vehicles purchased in Vermont were SUV's or pickup trucks. In 2018, that number was 80%.



As of 2016, Vermont's emissions from electricity were 8% of our total statewide emissions, while emissions from transportation and thermal energy use made up more than 70% of our emissions. The 2018 data shows that emissions from electricity have continued to decline, and are now likely less than 2% of Vermont's total greenhouse gas emissions.

And yes, while we have achieved real and important emissions reductions from our electricity sector (and can still make more), they have been dwarfed by increased fossil fuel use for how we get around and heat our homes and buildings.

While we can do more, the progress we have already made in our electricity sector is impressive and represents a strong foundation for further progress. Thanks to the Renewable Energy Standard, passed in 2015, Vermont has cut its emissions from electricity over 80% between 2015 and 2018. This will get us about one quarter of the way toward our Paris Climate Agreement commitment.

As a result of the Renewable Energy Standard, Vermont now likely has the lowest emitting electricity sector in the entire country, both overall and per capita. What having the cleanest electricity in the US means is that whenever we electrify how we heat our homes, with heat pump water heaters or cold climate heat pumps, or how we get around with electric vehicles, ***we get a greater emissions reduction benefit from doing so than anywhere else in the United States.***

While EAN's Path to Paris may sound like a big lift, looked at another way it's not asking very much: **all we have to do to meet this commitment is get our per capita emissions down to those of New Hampshire over the next 5 years.** That means each Vermonter, on average, reducing our climate pollution by 4 tons per year.

It's really quite simple: fossil fuels are the problem and each of us has to do what we can to stop creating new demand for them, especially because electric and renewable alternatives are proven, ready, and available. Most Vermonters I know don't like using gasoline or diesel or fuel oil or propane. They simply do so because that's what the vehicles they use to get around run on, or because that's what their heating system requires. To reduce fossil fuel use, part of the solution is helping make sure that we transition out the equipment – the vehicles and heating systems – that lead to fossil fuel use in the first place, by focusing on the point of purchase. Once those vehicles, heating systems, and pieces of equipment are ready to be replaced, we can avoid decades of further fossil fuel pollution and cost.

In summary, we have the technology to move toward ending fossil fuel use and to do so in a way that brings economic benefit to all Vermonters. But this transformation will not happen without a comprehensive energy policy and regulatory framework that also requires emissions reduction from the transportation and thermal sectors – where over 70% of Vermont's climate pollution comes from. And this transition will not be equitable without state incentives and assistance to ensure that the economic savings and health benefits of getting off fossil fuels don't just accrue to upper income Vermonters. As Upper Austria, Norway, Quebec, California, and every other country, province, and state we have studied has learned: pairing emissions reduction with economic growth requires both sticks and carrots, or regulations and incentives — and it requires doing so across all energy sectors, not just electricity.

To end, I want to connect this conversation to our current context. If the COVID-19 pandemic has taught us anything, it is the importance of listening to experts and swiftly acting on the best available data and evidence. As we've seen at the national level, ignoring warnings – whether from public health experts or climate scientists – only makes future options more limited, costly, painful, and not nearly as effective as if we acted early on.

Our government has largely ignored the warnings of climate scientists for three decades now. As a result, the amount of climate disruption that is already unavoidable due to high concentrations of greenhouse gas emissions is dangerously high. But we can still avoid the worst impacts of a destabilized climate if we act with resolve and all do our part. And far from a sacrifice, this can be a foundational strategy for economic revitalization and resiliency for Vermont.

Finally, while I cannot take a position on a piece of legislation on behalf of our entire Network, you should know that a Global Warming Solutions Act was one of nine proposals presented at our Annual Network Summit last Fall. After Network members heard all of the proposals presented to help advance our Network's mission and then voted on their top priorities, the Global Warming Solutions Act gained the most support of any proposal presented.

Thank you for the opportunity to join you today.