

Energy Action Network (EAN) Presentation
House Energy & Technology Committee
Vermont Legislature
Jan. 25, 2019

- My name is Jared Duval and I serve as the Executive Director of the Energy Action Network. Before coming to EAN I served at the Agency of Commerce and Community Development as Vermont's Economic Development Director for our green economy and working lands sectors, focused on business support and workforce development across the state. Previously, my educational training was both in social science research, with a master's degree from the University of Cambridge, and also in public policy analysis, with a master's degree from Princeton's Woodrow Wilson School of Public Affairs.
- Energy Action Network (EAN) is a diverse network of over 200 non-profits, businesses, public agencies, and other organizations working together and supported by a backbone staff to further the Network's mission. For example, our members range from the Lake Champlain Chamber of Commerce, to Bourne's Energy, to Green Mountain Power, to Neighborworks of Western Vermont, and Vermont Technical College.
- The Network's mission is to achieve Vermont's 90% renewable by 2050 total energy commitment and to significantly reduce Vermont's greenhouse gas emissions in ways that create a more just, thriving, and sustainable future for Vermonters.
- One of the ways that we support our Network and the State more broadly is to serve as Vermont's trusted source for tracking and analysis of progress toward Vermont's energy and emissions commitments. For example, that includes our Annual Progress Report (the 2018 edition will be released in a little over a month, in the first week of March) and we also manage Vermont's Energy Dashboard.
- Today I want to share with you where Vermont stands relative to our total energy and climate commitments and, more specifically, about the scale and pace of action required to meet these commitments in a way that will improve our economy.

- Overall, Vermont has made some significant progress toward our renewable energy commitments, to around 19 to 20% as of 2017. This is largely because of progress in our electric sector and policies like net metering, standard offer, and the Renewable Energy Standard.
- But to continue making progress toward our Comprehensive Energy Plan (CEP) goals, it will require a focus beyond just the electric sector and on *all* of our energy sectors. Specifically, we can not hope to bend the curve to meet 90% renewable by 2050 unless we transition our **transportation and heating sectors** off of fossil fuels and towards renewable energy, both via electrification and with sustainable solid and liquid renewable fuels.
- This is because transportation and heating together make up 86% of our energy use and 71% of our greenhouse gas emissions.
- While we have made real progress in becoming more renewable as a State, we are falling far short of our emissions reduction commitments. As of 2015, our emissions had increased 16% above our 1990 levels and 10% above 2013 levels.
- Gov. Scott committed to the Paris Climate Agreement, which requires a 26-28% reduction below 2005 levels by 2025. The legislature has passed even more ambitious GHG reduction goals. We are not currently on track to come anywhere close to meeting either the Governor's commitment or the Legislature's goals.
- The increase in Vermont's emissions is primarily due to increased use of fossil fuels in our transportation and thermal sectors – how we get around and heat our homes & buildings. In fact, nearly 80% of VT's GHG emissions increase as of 2015 is because of these two sectors.
- We will gain a fuller benefit of having a very renewable electric supply when we electrify far more of our transportation (electric vehicles) and heating (cold-climate heat pumps).
- To meet Vermont commitments or goals, our current pace of energy transformation is far too slow.

- To meet the Paris Climate Agreement by 2025, Vermont would need something on the order of the following over the next six years:
 - 90,000 additional electric vehicles replacing internal combustion cars (currently approx. 2,800 EV's in VT)
 - 25,000 homes and buildings switching from fossil fueled heating systems to advanced wood heat (automated pellet or chip boilers or efficient stoves) (currently approx. xxx homes heating with automated wood systems or pellet stoves).
 - 90,000 additional homes and buildings receiving efficiency retrofits (currently approx. 25,400 buildings retrofitted).
 - 90,000 additional homes and buildings moving from fossil fuel heating systems to heat pump heating systems (currently approx. 10,700 heat pump systems in VT)
 - 90,000 additional homes and building replacing fossil fueled water heaters with heat pump water heaters (currently approx. 10,100 heat pump water heaters in VT)

- All together, these five measures would get us just over halfway to our Paris commitment. The remainder of climate pollution reduction would have to come from things like increased fuel-efficiency standards, a doubling of transit, more renewable electricity generation, greater battery storage and smart grid development, and more.

- While these numbers may seem large, especially relative to where we are today, they are certainly possible. For context, there are just over 335,000 housing units in Vermont (source: US Census). So these goals would require just one third of Vermont housing units to be converted to renewable heating (either cold climate heat pumps and/or advanced wood heat) over the next six years.

- Likewise, there are approximately 44,000 new vehicles purchased in Vermont each year (source: Auto Alliance). If that sales rate stays stable over the next six years, that would be 264,000 total new vehicles sold in that time-period. Again, if about one out of every three Vermonters making a new vehicle purchase in the next six years opts for an electric vehicle, we could meet these goals.

- While there are certainly actions all of us can take and roles for all of us to play (including renters, used-vehicle owners, and more), in this example, the main responsibility would be on those Vermonters who are owners of housing units and purchasers of new vehicles – those with the opportunity and, usually, the means, to make these purchasing decisions.

- The status quo of Vermont's dependence on fossil fuels is harming the Vermont economy in multiple ways – and meeting our Paris targets can reduce energy costs for Vermonters and strengthen Vermont's economy.

- Over half of Vermonters energy spending is for transportation and heating. Our dependence on fossil fuels for these energy needs leaves Vermonters vulnerable to high fuel costs and volatile prices. However, both electric options and sustainable wood heating are both lower cost and less volatile fuel sources. Lifetime costs for EV's are now lower than comparable internal combustion engine vehicles. And the cost per mile is significantly lower for EVs than for gas vehicles. For instance, Burlington Electric Department just announced a new residential EV charging rate that will be the equivalent of 60 cents per gallon.
- With 78 cents of every dollar spent on fossil fuel leaving the state, that's over \$1.5 billion a year draining out of the Vermont economy. That's money that goes overseas to places like Saudi Arabia and Russia rather than supporting jobs for our neighbors and improving our local economy. While the share of energy dollars that stay in state when spent on various forms of renewable energy (whether EVs or transit) varies, renewable options consistently keep more money local than energy dollars spent on fossil fuels.
- Other states and provinces have experienced impressive economic growth while reducing their emissions below their 1990 levels, from California to British Columbia to our neighbors to the north in Quebec. (Show decoupling graphics).
- EAN members support different policies:
 - Some support expanding the RGGI model to cover transportation emissions through the Transportation and Climate Initiative (TCI)
 - Some support Vermont joining California and Quebec in the Western Climate Initiative
 - Some support a revenue neutral carbon fee that would reduce Vermont's most regressive tax, the sales tax
 - Still others support the Essex Plan or another policy.
 - Given the variety of positions across our Network, I will not publicly support one over the other, especially because to preserve our independent and neutral role, we do not advocate for specific policies.
- It often goes overlooked and under-reported that Vermont is *already* participating in a cap and invest program to reduce emissions and make our *electric* energy use more efficient and renewable. It's called the Regional Greenhouse Gas Initiative (RGGI), and has helped cut greenhouse gas pollution from the electric sector regionally by over 50%, while contributing \$1.4 billion in net economic value to participating states from 2013-2015. Vermont's participation in RGGI has specifically brought \$18.7M for residential weatherization services through Efficiency Vermont alone since 2008.

- However, since RGGI currently only covers the electric sector, which generated only 10% of Vermont's emissions in 2015, there is an upper-limit to the positive impact of this sector-specific cap and invest policy.
- Without further emissions caps beyond the electric sector, and the combined benefit of the market signals they will send and the revenues they can provide to help Vermonters move to more affordable and stably priced efficient and renewable alternatives, Vermont will almost certainly fall short of Gov. Scott's commitment to the Paris Climate Agreement and of our 90% renewable by 2050 Comprehensive Energy Plan commitment. And we'll continue sending Vermonters hard earned money out of state on 100% imported fossil fuels that drain our economy.
- Money invested in efficiency and renewables creates far more local benefit, with a larger share staying and recirculating in-state, creating jobs and growing the Vermont economy. We can meet our energy and emissions goals and -- if we do so with thoughtfully crafted policy -- we can also strengthen Vermont's economy. Thank you.