

Energy Action Network (EAN) Presentation to Senate Transportation Committee
Vermont Legislature
Feb. 1, 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. A few examples of our members include the Lake Champlain Chamber of Commerce, Bourne's Energy, Green Mountain Power, Neighborworks of Western Vermont, and the Vermont Wood Pellet Company.
- 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 challenges and opportunities that exist in our Transportation sector.
- Overall, Vermont has made some early progress toward our 90% renewable by 2050 total energy commitment and we now stand at around 19% renewable as

of 2018. 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 makes up 44% of Vermont's energy use and 43% of our greenhouse gas emissions. Together with heating, these two energy sectors 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, with the **transportation sector responsible for 56% of Vermont's total emissions increase since 1990.**
- 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. EAN has modeled what it would take to meet our Paris Climate commitment by 2025, and to do so Vermont would need

something on the order of the following from our transportation sector over the next six years:

- 90,000 additional electric vehicles (we modeled half PHEVs and half AEVs) replacing internal combustion cars (currently there are approx. 2,800 EV's in VT)
 - Increase fuel efficiency (MPG) of the remaining internal combustion engine (ICE) fleet by 5% (from 22.2 MPG in 2015 to 23.3 in 2025)
 - Double Transit (from 19% of work commutes in 2017 to 38% of work commutes by 2025)
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- All together, these three measures in the transportation sector would reduce VT's emissions by .75 million metric tons of CO₂e, just under a third of the total reduction we'd need by 2025 to meet our Paris commitment. The remainder of climate pollution reduction would have to come from other actions, including in the thermal and electric sectors and more.
 - While these numbers may seem large, especially relative to where we are today, they are certainly possible. For context, 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. 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 the EV goal.
 - There are already many electric vehicle options available to Vermonters, with more coming to dealerships every year. Overall, there are now 32 different electric vehicle options available to Vermonters. These fall into two categories: Plug-In Hybrid Electric Vehicles (PHEVs) and All Electric Vehicles (AEVs)
 - There are 20 Plug-In Hybrid Electric Vehicle (PHEV) models available to Vermonters, 8 of which have all wheel drive either standard or as an option. As a group, these PHEV's average 446 mile gas & electric range, going as high as a 640 mile range (the Toyota Prius Prime).
 - There are 12 All Electric Vehicle models available to Vermonters, 3 of which have all wheel drive. As a group, these AEVs average a 186 mile electric range, including the Chevy Bolt at 238 miles.
 - Half of these vehicles are under \$30,000 after the federal tax credit.
 - AutoNews reports that there are expected to be nearly 100 new or updated EV models available in the next few years.
 - The status quo of Vermont's dependence on fossil fuels is harming the Vermont economy in multiple ways.

- Over half of Vermonters energy spending is for transportation. Our dependence on fossil fuels for transportation leaves Vermonters vulnerable to high fuel costs and volatile prices. However, 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, on average for Vermont at the equivalent of \$1.50 per gallon. And Burlington Electric Department just announced a new residential EV charging rate that will be the equivalent of only 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. Money spent on electricity keeps 2 to 3 times the amount of our energy dollars in state as compared to spending 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.
 - However, I do need to say that it is clear that unless we thoughtfully pursue an economy-wide or all energy sector approach to emissions reduction and re-investment, as offered by one of these policies, there is probably no chance of meeting Vermont's renewable energy and emissions reduction commitments. And without one of these policies,

Vermonters are likely to stay dependent on the highest-cost, most volatile energy there is (fossil fuels) and continue sending their hard-earned dollars out of state, to the detriment of our struggling state economy.

- 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 spent on 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.