

**Energy Action Network (EAN) Presentation**  
**House Energy & Technology Committee**  
**Vermont Legislature, Jan. 29, 2020**

- My name is Jared Duval and I serve as the Executive Director of the Energy Action Network.
- The Energy Action Network (EAN) is a diverse network of over 200 non-profits, businesses, public agencies, and other organizations all working together to help meet Vermont's energy and emissions reduction commitments.
- The Network's mission is to achieve Vermont's 90% renewable by 2050 total energy commitment (as outlined in the 2016 Comprehensive Energy Plan) and to significantly reduce Vermont's greenhouse gas emissions in ways that create a more just, thriving, and sustainable future for Vermonters.
- The Network is supported by a small backbone non-profit organization, EAN, that commits to serve as a neutral convener of the Network and refrain from lobbying for specific bills. In collaboration with State agencies and departments such as the Public Service Department, Agency of Natural Resources, and the Agency of Transportation, among others, EAN tracks progress toward Vermont's energy and emissions reduction commitments with an annual progress report for Vermont (to be released on March 11, 2020) which provides officially sourced data and evidence-based analysis for local, regional, and state planners and policymakers.
- Today I want to share with you where Vermont stands relative to our emissions reduction commitments, providing some information from the recently released Vermont Greenhouse Gas Inventory. More specifically, I want to share some analysis that EAN has done regarding how we compare to our neighbors in the region and what we can learn from their example and those of places around the world that have been more successful in reducing emissions than we have.
- Starting with the recently released state GHG emissions inventory: broadly speaking there is some good news, more bad news, and a silver lining.
- The good news is that we finally saw a year to year decline in emissions between 2015 and 2016, from 10.19 to 9.76 million metric tons of carbon dioxide equivalent (MMTCO<sub>2</sub>e) after seeing four consecutive years of increasing climate pollution in the years prior.

- For a sense of scale, 1 million metric tons of CO<sub>2</sub> is the equivalent of burning 114 million gallons of gasoline – or of not driving 216,000 passenger cars for one year. So nearly 10 million metric tons is a huge number – the equivalent of burning over 1 billion gallons of gasoline.
- To bring this down to the personal level, the average fossil fueled passenger vehicle emits about 5-7 tons of CO<sub>2</sub>/ year and, per capita, each Vermonter is responsible for about 15 tons of CO<sub>2</sub>e per year, overall. For most Vermonters, their gas vehicle or their fossil fuel heating system is the single biggest source of their emissions.
- The increase in Vermont's emissions since 1990 is primarily due to increased use of fossil fuels for how we get around. In fact, 86% of VT's GHG emissions increase comparing 1990 to 2016 is from the transportation sector.
- The bad news is that Vermont still has the highest per capita emissions in the region (of any state in New England, or NY or Quebec); is the only state in the region that has not yet managed to decrease its emissions below 1990 levels; and we have made the least progress toward the Paris Climate commitment of any state in the region.
- We are not currently on a trajectory to ensure that we meet our commitment to the Paris Agreement of reducing emissions 26-28% below 2005 levels by 2025 (we're just 5% below peak 2005 levels as of the latest data, from 2016). Vermont is even farther away from our statutory and Comprehensive Energy Plan goals, both of which require significant reductions below 1990 levels (8.6 MMTCO<sub>2</sub>e).
- For most states, the biggest decline in emissions has come from cleaning up their electricity sources. This is true for Vermont too -- but the impact of RGGI and the 2015 RES in helping reduce emissions from the electricity sector has been dwarfed by our increase in emissions due to higher fossil fuel use for transportation (and building heating).
- The number of vehicle miles traveled per person has been on the rise in Vermont, with Vermonters driving 200 miles more per capita in 2017 than in 2015. At 11,888 miles per person as of 2017, Vermont has the highest per capita vehicle miles traveled of any state in the region.
- Additionally, while vehicles have been getting more efficient overall, Vermonters have been buying bigger vehicles, limiting the benefit we could be getting from increased fuel efficiency standards.

- According to data from the Vermont Vehicle and Automotive Distributors Association (VADA), last year 80% of new vehicles sold were SUVs or light trucks. Seven years ago it was 55%. This aligns with global trends, where a doubling in market share for SUVs was the second-largest contributor to the increase in global CO2 emissions since 2010 [citation: International Energy Agency (IEA) World Energy Outlook 2019 report]
- The silver lining is that we are seeing a real and durable decline in emissions from the electricity sector, from 1 MMTCO<sub>2</sub>e in 2015 to 810,000 tons in 2016, and preliminary estimates of 490,000 tons in 2017 and 190,000 tons in 2018. This decline is primarily a result of the Renewable Energy Standard (passed in 2015, went into force in 2017). The RES has had the effect of driving climate pollution from our electricity sector to near zero (for 2018, 62% of VT electricity consumption was renewable, mostly hydro, and 30% was nuclear). That's over 90% carbon free as of 2018.
- What that means is that we very likely now have the least climate polluting electricity supply in the United States (either in aggregate or per capita) and so we can get the greatest emissions reduction benefit from electrifying our transportation and heating systems of anywhere in the country.
- The challenge from a Paris perspective is that, by 2018 we'll have essentially picked the low-hanging fruit of getting emissions reduction from how we purchase electricity. That means that to get continued reductions beyond 2018, we'll need new policies, regulations, and investments to drive down emissions from the sectors that are the elephants in the room: transportation and heating.
- Stated differently, if the RES-driven reduction in electricity sector emissions gets us 1/4 or even 1/3 of the way to the Paris commitment (as our analysis suggests), then what is going to get us the remaining 2/3 or 3/4 of the way there? The biggest opportunities are in transportation and thermal, but we don't yet have the policies, regulations, and investments to leverage real change in those sectors.
- And if we don't have a more total energy or economy-wide policy and regulatory framework to drive down emissions this year or next, it is unlikely we'll see significant emissions reductions materialize beyond the electricity sector in time for the 2025 Paris deadline.
- Looked at another way, all we have to do to meet our Paris commitment is reduce Vermont's per capita emissions from about 15 tons a person to 12 tons a person (which would still be higher than every other state in the region except Maine).

- The US States and Canadian provinces that both have the lowest per capita emissions and that have achieved the largest emissions declines did so by combining regulations and incentives, or sticks and carrots. Specifically, California and Quebec through the Western Climate Initiative (an economy-wide cap and invest program); Northeastern states through the Regional Greenhouse Gas Initiative (a cap and invest program focused on the electricity generation sector); and/or some Northeastern states through Global Warming Solutions Acts or their equivalent (as in Massachusetts).
- How you measure emissions matters. To align with national and international standards, every state or country that conducts a greenhouse gas (GHG) inventory uses a “sector-based” approach that accounts for the emissions that occur within the boundaries of its territory. This approach avoids double-counting of emissions in reporting to bodies like the Energy Information Administration (EIA) or the United Nations’ Intergovernmental Panel on Climate Change (IPCC).
- However, we also know that when we purchase goods and services, our consumer demand makes us responsible for emissions throughout a supply-chain, back to the sources of where and how they were produced. That is why some states – including Minnesota and Oregon – supplement their official “sector-based” or “territorial” GHG inventory with a “consumption based emissions inventory” (CBEI), to provide a fuller view of how its state is responsible for climate pollution.
- Vermont currently only utilizes a sector-based inventory. However, based on the results of other consumption-based emissions inventories, it is likely that no matter how you measure Vermont’s emissions, the two largest sources of our climate pollution come from vehicles and heating appliances.
- Without policy and regulatory measures 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 likely fall short of Gov. Scott’s commitment to the Paris Climate Agreement.
- 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 significantly strengthen Vermont’s economy. Thank you.