Designing Equitable Clean Transportation Policy for Vermont

Approaches to Centering Equity and Climate Justice in Cap-And-Invest and Low-Carbon Fuel Standards

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Project Purpose

• Examine two policy approaches—cap-and-invest and low-carbon fuel standards—that could help Vermont meet its climate goals in the transportation sector

• Research how these policy approaches have been implemented in other jurisdictions in the US and Canada to address equity and environmental justice

• Make recommendations for equitable policy and program design in Vermont
Research Scope and Methodology

• Understand the clean transportation policy context in Vermont

• Research and review key equity and environmental justice elements of cap-and-invest programs and low-carbon fuel standards in 6 jurisdictions in the US & Canada

• Key questions:
  • How have other jurisdictions addressed equity and environmental justice in program design and implementation?
  • What are the features of equitable programs/policies?
  • What can be considered as best practices to help inform future policy and program design and implementation in Vermont?
Vermont’s Transportation Sector

- Transportation is largest source of greenhouse gas emissions statewide (40%)
- Transportation makes up 45% of total energy expenditures
- 99% of Vermonters rely on fossil fuels for transportation
- 71% of transportation emissions come from the light-duty fleet (cars, vans, SUVs, pickup trucks)
- Rural state with low population density = high reliance on personal vehicles
• **GWSA:**
  - 26% below 2005 levels by 2025
  - 40% below 1990 levels by 2030
  - 80% below 1990 levels by 2050

• To meet the requirements of the GWSA, transportation sector emissions will need to be dramatically reduced
Emissions Reduction Gap

• The primary policy recommendation for the transportation sector in the 2021 Climate Action Plan was to join the Transportation and Climate Initiative Program (TCI-P)
  • The TCI-P, a regional cap-and-invest program for transportation fuels, was projected to reduce transportation emissions by ~26% by 2032
  • Multiple states pulled out of the TCI-P, making it unlikely that it will move forward in the near term

• Rulemaking for Advanced Clean Cars II (ACC II) and Advanced Clean Trucks (ACT) is in progress
  • These programs are estimated to achieve ~26% of the required emissions reductions in the transportation sector

• In the absence of TCI-P, Vermont needs other policy options to achieve emissions reductions in the transportation sector
Transportation is an important equity issue, especially for rural, low-income Vermonters.

Low-income households consume less fuel than high-income households but have a significantly higher fuel burden.

- Rural, low-income drivers spend, on average, 9.5% of their income on transportation fuels (in addition to vehicle ownership and maintenance costs).

Estimates suggest that rural drivers could save up to $1500 per year by switching from a gasoline-powered car to a comparable EV.

- High upfront costs and limited access to charging infrastructure are barriers to adoption.
2017 annual vehicle fuel burden by income and location-type, northeast U.S.

Annual vehicle fuel expenditure as an estimated percentage of income

Source: U.S. Department of Transportation, National Household Travel Survey, 2017.
Environmental Justice

• Climate change and pollution exposure disproportionately impact marginalized communities, including low-income communities and communities of color
  • Disproportionate health impacts
  • Less access to resources needed to prepare for and deal with the effects of climate change
  • History of underinvestment in marginalized communities

• Research by Dr. Bindu Panikkar (UVM) found:
  • Marginalized communities in VT are at a higher risk of air pollution exposure, heat vulnerability, and proximity to pollution sites
  • BIPOC Vermonters 2x as likely to report a lack of access to public transit and lack of vehicle ownership
Cap-and-Invest Programs

• What is cap-and-invest?
  • A specific type of cap-and-trade approach
  • As with most cap-and-trade approaches, emissions are ‘capped’ and the cap declines over time
  • Covered entities must present one ‘allowance’ for every ton of GHG emissions they are responsible for
  • Allowances can be traded in the market
  • The “invest” distinction: allowances are auctioned and proceeds from the auction can be used to invest in climate and clean energy programs

• Vermont already participates in a cap-and-invest program: the Regional Greenhouse Gas Initiative (RGGI)

• Multi-sectoral or economy-wide cap-and-invest programs currently exist in 4 jurisdictions in the US & Canada
<table>
<thead>
<tr>
<th>Program</th>
<th>California</th>
<th>Quebec</th>
<th>Nova Scotia</th>
<th>Washington</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Year implemented</strong></td>
<td>2013</td>
<td>2013</td>
<td>2019</td>
<td>Beginning Jan, 2023</td>
</tr>
<tr>
<td><strong>Sectors covered</strong></td>
<td>Electricity generation and imports, large industrial facilities, fuel suppliers</td>
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</tr>
<tr>
<td><strong>Total revenue generated to date</strong></td>
<td>$18.2 billion</td>
<td>$6.4 billion CAD</td>
<td>$106.2 million CAD</td>
<td>NA</td>
</tr>
<tr>
<td><strong>Is there a required minimum for equity investments?</strong></td>
<td>Yes - at least 35% of funds must benefit disadvantaged/low-income communities</td>
<td>No</td>
<td>No</td>
<td>Yes - at least 35% of funds must go to overburdened communities and at least 10% to Tribal projects</td>
</tr>
<tr>
<td><strong>Is there an EJ advisory board/committee that guides investment decisions?</strong></td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td><strong>Are offsets permitted?</strong></td>
<td>Yes, up to 8% of compliance obligation</td>
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<td>No</td>
<td>Yes, up to 8% of compliance obligation (decreasing to 6% in 2027)</td>
</tr>
</tbody>
</table>
Investing in marginalized communities

• Several programs have a required minimum percentage of investments that must go toward disadvantaged or overburdened communities

• Proceeds from California’s cap-and-invest program go toward California Climate Investments (CCI), which distributes funds to climate-related projects throughout the state
  • A minimum of 35% of CCI funding must benefit “priority populations” – though it has typically been around 50%

• Washington’s program will require that at least 35% of proceeds go toward overburdened communities and at least 10% to projects in Tribal communities
California and Washington have developed mapping tools to identify and track communities that are disproportionately burdened by the effects of climate change.

- Both use multiple environmental, health, economic, and social indicators.
- California: California Communities Environmental Health Screening Tool (CalEnviroScreen).
- Mapping tools are used to inform investment decisions and track environmental health disparities.
Other Key Features

• Air quality and pollution monitoring in overburdened communities

• Workforce training and transition for industries that will be most impacted by the clean energy transition

• Creation of an equity or environmental justice advisory board

• Limiting the amount and type of offsets to ensure that the majority of compliance is met through direct emissions reductions:
  • Washington allows covered entities to meet up to 8% of their compliance obligation with offsets, and 3% must be from projects run by Tribal communities
Low-Carbon Fuel Standards

• What is a Low-Carbon Fuel Standard (LCFS)?
  • A market-based policy approach to reducing the carbon intensity (CI), on a lifecycle basis, of transportation fuels
  • CI targets or benchmarks are set for each year
  • Fuels with CI below the benchmark generate credits; fuels with CI above the benchmark generate deficits
  • Fuel suppliers can trade and bank credits
  • The CI benchmark decreases over time, incentivizing companies to bring more lower-carbon fuels to the market

• Fewer examples of equity-centered program design exist
  • Need for additional research, community engagement, and program development if a LCFS is adopted in VT
2011 – 2018 Performance of California LCFS

*Carbon intensities based on composite of gasoline and diesel fuels
<table>
<thead>
<tr>
<th>Program</th>
<th>California</th>
<th>British Columbia</th>
<th>Oregon</th>
<th>Washington</th>
</tr>
</thead>
<tbody>
<tr>
<td>Year implemented</td>
<td>2011</td>
<td>2008</td>
<td>2016</td>
<td>Beginning Jan, 2023</td>
</tr>
<tr>
<td>Requirement</td>
<td>20% reduction in fuel CI from 2010 levels by 2030</td>
<td>20% reduction in fuel CI from 2010 levels by 2030</td>
<td>10% reduction in fuel CI from 2015 levels by 2025</td>
<td>20% reduction in fuel CI from 2017 levels by 2038</td>
</tr>
<tr>
<td>Notable equity-related elements</td>
<td>Electric utilities that generate credits are required to sell the credits and use the revenue to benefit current or future EV customers (via rebates/incentives)</td>
<td>Increasing engagement with rural and Indigenous communities in decision-making about future LCFS expansion</td>
<td>An equity advisory committee makes recommendations to the DEQ on rulemaking and implementation.</td>
<td>50% of utility revenue must be invested in transportation electrification projects, with 60% of that going to overburdened communities</td>
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</table>
Transitioning to cleaner transportation fuels can mitigate harmful air pollutants and reduce particulate matter from vehicles.

- Particularly important for low-income communities and communities of color that tend to be located closer to major transportation corridors.

Oregon health impacts study:
- Achieving a 25% reduction in fuel carbon intensity by 2035 could result in:
  - ~13% fewer annual deaths linked to tailpipe pollution and particulate matter
  - $100 million per year in avoided health care costs
Many LCFS programs allow electric utilities to opt in to earn credits on behalf of their customers with EVs
- Allows utilities to generate revenue that can be invested in clean transportation/EV projects
  - Incentives or rebates for the purchase of EVs and residential chargers
  - Expansion of public charging infrastructure
  - Electrification of municipal vehicles
  - Outreach and education programs

Oregon: utilities have invested almost $20 million in EV projects since the program began in 2016

Washington: will require utilities to invest at least 50% of that revenue in transportation electrification projects, with 60% of that going to overburdened communities
1) Develop a mapping tool that identifies communities in VT that are disproportionately burdened by environmental impacts

- The tool should use a variety of environmental, health, economic, and social indicators to measure and track priority regions/communities
- This work is already in progress after passage of the state’s recent environmental justice bill (S.148).

2) Create an equity/environmental justice advisory board

- To provide feedback and recommendations on program design, implementation, and investment decisions
3) Establish dedicated funding requirements for equity-focused investments

- Investment of cap-and-invest or LCFS revenues should be guided by:

  1. A specific minimum funding requirement (at least 40%) for projects that benefit disadvantaged communities

  2. A clear framework for evaluating projects to ensure that they will provide direct, tangible benefits to communities
Recommendations (cont.)

4) Establish specific, statutory requirements for ongoing monitoring and evaluation of program effectiveness

• Specifically, to evaluate benefits for and impacts on overburdened communities and to ensure program accountability

• This could include:
  • Requiring that the administering agency submit an annual equity impact report
  • Requiring periodic air quality monitoring or other public health monitoring in target communities
5) Pursue an accessible and transparent community engagement process throughout all stages of program design, implementation, and evaluation

- Public participation and constituent feedback is necessary to understand transportation needs and priorities in VT communities

- Current work:
  - Focus groups led by EAN’s Clean Transportation Equity Network Action Team
  - VTrans community engagement process as part of the development of a Transportation Equity Framework
Questions and Comments?

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