

Final Proposed Filing - Coversheet

Instructions:

In accordance with Title 3 Chapter 25 of the Vermont Statutes Annotated and the "Rule on Rulemaking" adopted by the Office of the Secretary of State, this filing will be considered complete upon filing and acceptance of these forms with the Office of the Secretary of State, and the Legislative Committee on Administrative Rules.

All forms shall be submitted at the Office of the Secretary of State, no later than 3:30 pm on the last scheduled day of the work week.

The data provided in text areas of these forms will be used to generate a notice of rulemaking in the portal of "Proposed Rule Postings" online, and the newspapers of record if the rule is marked for publication. Publication of notices will be charged back to the promulgating agency.

PLEASE REMOVE ANY COVERSHEET OR FORM NOT REQUIRED WITH THE CURRENT FILING BEFORE DELIVERY!

Certification Statement: As the adopting Authority of this rule (see 3 V.S.A. § 801 (b) (11) for a definition), I approve the contents of this filing entitled:

Vermont Low Emission Vehicle and Zero Emission Vehicle Rules

_____/s/ Julia S. Moore_____, on 11/1/2022
(signature) (date)

Printed Name and Title:

Julia S. Moore, Secretary, Agency of Natural Resources

RECEIVED BY: _____

- Coversheet
- Adopting Page
- Economic Impact Analysis
- Environmental Impact Analysis
- Strategy for Maximizing Public Input
- Scientific Information Statement (if applicable)
- Incorporated by Reference Statement (if applicable)
- Clean text of the rule (Amended text without annotation)
- Annotated text (Clearly marking changes from previous rule)
- ICAR Minutes
- Copy of Comments
- Responsiveness Summary

1. TITLE OF RULE FILING:

Vermont Low Emission Vehicle and Zero Emission Vehicle Rules

2. PROPOSED NUMBER ASSIGNED BY THE SECRETARY OF STATE

22P021

3. ADOPTING AGENCY:

Agency of Natural Resources

4. PRIMARY CONTACT PERSON:

(A PERSON WHO IS ABLE TO ANSWER QUESTIONS ABOUT THE CONTENT OF THE RULE).

Name: Megan O'Toole

Agency: Agency of Natural Resources

Mailing Address: 1 National Life Dr. Davis 4 Montpelier,
Vermont 05620

Telephone: (802)249-9882 Fax:

E-Mail: megan.otoole@vermont.gov

Web URL *(WHERE THE RULE WILL BE POSTED)*:

<https://dec.vermont.gov/air-quality/laws>

5. SECONDARY CONTACT PERSON:

(A SPECIFIC PERSON FROM WHOM COPIES OF FILINGS MAY BE REQUESTED OR WHO MAY ANSWER QUESTIONS ABOUT FORMS SUBMITTED FOR FILING IF DIFFERENT FROM THE PRIMARY CONTACT PERSON).

Name: Deirdra Ritzer

Agency: Agency of Natural Resources

Mailing Address: 1 National Life Dr. Davis 4 Montpelier,
Vermont 05620

Telephone: (802)233-8052 Fax:

E-Mail: deirdra.ritzer@vermont.gov

6. RECORDS EXEMPTION INCLUDED WITHIN RULE:

(DOES THE RULE CONTAIN ANY PROVISION DESIGNATING INFORMATION AS CONFIDENTIAL; LIMITING ITS PUBLIC RELEASE; OR OTHERWISE, EXEMPTING IT FROM INSPECTION AND COPYING?) No

IF YES, CITE THE STATUTORY AUTHORITY FOR THE EXEMPTION:

PLEASE SUMMARIZE THE REASON FOR THE EXEMPTION:

7. LEGAL AUTHORITY / ENABLING LEGISLATION:

(THE SPECIFIC STATUTORY OR LEGAL CITATION FROM SESSION LAW INDICATING WHO THE ADOPTING ENTITY IS AND THUS WHO THE SIGNATORY SHOULD BE. THIS SHOULD BE A SPECIFIC CITATION NOT A CHAPTER CITATION).

10 V.S.A. Sections 554, 558, 567, 593(b).

8. EXPLANATION OF HOW THE RULE IS WITHIN THE AUTHORITY OF THE AGENCY:

10 V.S.A. Section 593 of the Vermont Global Warming Solutions Act requires ANR to adopt the proposed rules by December 1, 2022 because they were incorporated into the Climate Action Plan adopted by the Vermont Climate Council in December of 2021. 10 V.S.A. §§558 and 567 of the Vermont Air Pollution Control Laws allow the ANR Secretary to set emission control requirements on sources of air contaminants in Vermont and specifically to control such emissions from motor vehicles through the prescription of requirements for the use of equipment that will reduce or eliminate emissions.

9. THE FILING HAS CHANGED SINCE THE FILING OF THE PROPOSED RULE.

10. THE AGENCY HAS INCLUDED WITH THIS FILING A LETTER EXPLAINING IN DETAIL WHAT CHANGES WERE MADE, CITING CHAPTER AND SECTION WHERE APPLICABLE.

11. SUBSTANTIAL ARGUMENTS AND CONSIDERATIONS WERE RAISED FOR OR AGAINST THE ORIGINAL PROPOSAL.

12. THE AGENCY HAS INCLUDED COPIES OF ALL WRITTEN SUBMISSIONS AND SYNOPSES OF ORAL COMMENTS RECEIVED.

13. THE AGENCY HAS INCLUDED A LETTER EXPLAINING IN DETAIL THE REASONS FOR THE AGENCY'S DECISION TO REJECT OR ADOPT THEM.

14. CONCISE SUMMARY (150 WORDS OR LESS):

ANR proposes to amend its existing Low and Zero Emission Vehicle Rules by adopting, via incorporation by reference, California's Advanced Clean Cars II (which amends Advanced Clean Cars I, currently in effect), Advanced Clean Trucks, Low NOx Heavy-Duty Omnibus, and the Phase 2 Greenhouse Gas Rule. The Low Emission Vehicle Rules set standards for emissions of criteria air pollutants and greenhouse gases from passenger cars, light-duty trucks, and medium- and heavy-duty vehicles and engines that are delivered for

sale or placed in service in Vermont. The Zero Emission Vehicle Rules set standards that ultimately require auto manufacturers to deliver more electric vehicles to Vermont. Lower emitting and electric vehicle technology will save Vermonters money, improve public health and air quality, and help to mitigate the impacts of climate change. See attached Regulation Summary Document for more information on the requirements of the rules.

15. EXPLANATION OF WHY THE RULE IS NECESSARY:

In response to the threat of climate change, in September 2020 the General Assembly enacted the Global Warming Solutions Act (GWSA), Act 153, which set goals to achieve greenhouse gas emission reductions and created a Climate Council charged with adopting an Initial Climate Action Plan in December 2021. The Initial Climate Action Plan directed ANR to adopt California's Advanced Clean Cars II, Advanced Clean Trucks, the Low NOx Heavy-Duty Omnibus, and the Phase 2 Greenhouse Gas emission standards for trucks and trailers because these rules are critical to meet Vermont's required reductions of greenhouse gas emissions from the transportation sector. These rules also further reduce emissions of criteria air pollutants from motor vehicles, which improve air quality and public health. ANR must adopt these regulatory amendments by December 1, 2022 to meet the deadlines in the GWSA and by the end of 2022 to mirror California's implementation of the rules.

16. EXPLANATION OF HOW THE RULE IS NOT ARBITRARY:

The decision made by the Agency to adopt or amend the proposed rules is rationally connected to the fact that reducing emissions of air contaminants, including greenhouse gases, will benefit public health and mitigate the impacts of climate change.

17. LIST OF PEOPLE, ENTERPRISES AND GOVERNMENT ENTITIES AFFECTED BY THIS RULE:

Individuals, businesses (including fleet owners), automobile manufacturers and dealers, the Agencies of Transportation (including the Department of Motor Vehicles), Agriculture Food and Markets, and Commerce and Community Development, the Departments of Public

Service, Buildings and General Services, and Health, the Public Utilities Commission, and local governments.

18. BRIEF SUMMARY OF ECONOMIC IMPACT (150 WORDS OR LESS):

The analysis of economic impact is addressed in direct and indirect costs and benefits. Auto manufacturers will be directly impacted, while most other Vermonters and Vermont entities will be indirectly impacted by the overall shift to vehicle electrification over time. The proposed rules would provide a positive economic impact to individuals and entities in Vermont in the form of cost savings related to vehicle ownership, monetized public health benefits, and avoided costs associated with the long term impacts of climate change on the economy, the environment and individuals. For example, the Low NOx Heavy-Duty Omnibus rule will result in increased upfront cost of vehicle ownership, however consumer benefits, such as lengthened vehicle useful life and enhanced warranty requirements, should result in savings over the period of vehicle ownership. See supplemental Technical Support Document for further information.

19. A HEARING WAS HELD.

20. HEARING INFORMATION

(THE FIRST HEARING SHALL BE NO SOONER THAN 30 DAYS FOLLOWING THE POSTING OF NOTICES ONLINE).

IF THIS FORM IS INSUFFICIENT TO LIST THE INFORMATION FOR EACH HEARING, PLEASE ATTACH A SEPARATE SHEET TO COMPLETE THE HEARING INFORMATION.

Date: 9/21/2022

Time: 05:00 PM

Street Address: Aldrich Public Library, Milne Room, 6
Washington Street, Barre, VT

Zip Code: 05641

Date: 9/23/2022

Time: 12:00 PM

Street Address: Virtual Hearing: Remote participation option
available at climatechange.vermont.gov; Zoom
link: <https://us06web.zoom.us/j/84646719364?pwd=ejhqU2YyeGhnR2pqMld4VnJJVG90UT09>, Meeting ID: 846 4671 9364,
Passcode: 313515, Dial-in Option: 1 (309) 205 3325.

Zip Code: N/A

Date:

Time: PM

Street Address:

Zip Code:

Date:

Time: PM

Street Address:

Zip Code:

21. DEADLINE FOR COMMENT (NO EARLIER THAN 7 DAYS FOLLOWING LAST HEARING):

9/30/2022

KEYWORDS (PLEASE PROVIDE AT LEAST 3 KEYWORDS OR PHRASES TO AID IN THE SEARCHABILITY OF THE RULE NOTICE ONLINE).

climate change

greenhouse gas emissions

air pollutants

motor vehicle emissions

transportation electrification

electric vehicles

air quality

Global Warming Solutions Act



Vermont Department of Environmental Conservation

Agency of Natural Resources

MEMORANDUM

To: Charlene Dindo, LCAR Committee Assistant

From: Julie Moore, Secretary, Agency of Natural Resources

Date: November 1, 2022

Re: Final Proposed Rules for: 1) The Vermont Low Emission and Zero Emission Vehicle Rules and 2) Amendments to the Vermont Air Pollution Control Regulations – Wood Heater rules

Please find attached a copy of two Final Proposed Rule from the Agency of Natural Resources:

- 1) The Vermont Low Emission and Zero Emission Vehicle Rules (22P-021), and
- 2) Amendments to the Vermont Air Pollution Control Regulations – Wood Heater Rules (22P-020)

We respectfully request that LCAR take up these rules during the same hearing, as they are procedurally linked and need to move through rulemaking and adoption in a parallel process.

The original fillings for the final proposed rules is being submitted to Louise Corliss at the VT State Archives & Records Administration.

If you have any questions or need additional information, please contact megan.otoole@vermont.gov or (802) 249-9882.

Cc: Louise Corliss, VT State Archives & Records Administration

Adopting Page

Instructions:

This form must accompany each filing made during the rulemaking process:

Note: To satisfy the requirement for an annotated text, an agency must submit the entire rule in annotated form with proposed and final proposed filings. Filing an annotated paragraph or page of a larger rule is not sufficient. Annotation must clearly show the changes to the rule.

When possible, the agency shall file the annotated text, using the appropriate page or pages from the Code of Vermont Rules as a basis for the annotated version. New rules need not be accompanied by an annotated text.

1. TITLE OF RULE FILING:

Vermont Low Emission Vehicle and Zero Emission Vehicle Rules

2. ADOPTING AGENCY:

Agency of Natural Resources

3. TYPE OF FILING (*PLEASE CHOOSE THE TYPE OF FILING FROM THE DROPDOWN MENU BASED ON THE DEFINITIONS PROVIDED BELOW*):

- **AMENDMENT** - Any change to an already existing rule, even if it is a complete rewrite of the rule, it is considered an amendment if the rule is replaced with other text.
- **NEW RULE** - A rule that did not previously exist even under a different name.
- **REPEAL** - The removal of a rule in its entirety, without replacing it with other text.

This filing is **A NEW RULE** .

4. LAST ADOPTED (*PLEASE PROVIDE THE SOS LOG#, TITLE AND EFFECTIVE DATE OF THE LAST ADOPTION FOR THE EXISTING RULE*):

This rule was previously adopted in CVR 12-031-001 and is being moved to a new Chapter of the Department of Environmental Conservation rules (CVR 12-030-040) via this rule filing. This rule was previously adopted as part of the Air Pollution Control Regulations and was

last amended by 18-048 entitled: Amendments to Subchapter XI, Low Emission Vehicle Program, Vermont Air Pollution Control Regulations, that went into effect 12/31/2018.



State of Vermont
Agency of Administration
109 State Street
Montpelier, VT 05609-0201
www.aoa.vermont.gov

[phone] 802-828-3322
[fax] 802-828-2428

Kristin L. Clouser, Secretary

INTERAGENCY COMMITTEE ON ADMINISTRATIVE RULES (ICAR) MINUTES

Meeting Date/Location: August 8, 2022, virtually via Microsoft Teams

Members Present: Chair Douglas Farnham, Brendan Atwood, Diane Bothfeld, Jennifer Mojo, John Kessler, Diane Sherman, and Michael Obuchowski

Members Absent: Donna Russo-Savage and Jared Adler

Minutes By: Melissa Mazza-Paquette

- 2:02 p.m. meeting called to order, welcome and introductions.
- Review and approval of minutes from the July 11, 2022 meeting.
- No additions/deletions to agenda. Agenda approved as drafted.
- Public comment:
 - Robb Kidd, Sierra Club, emailed letter to ICAR members on 08/03/22 pertaining to the Vermont Low and Zero Emission Vehicle Regulations proposed rule.
- Presentation of Proposed Rules on pages 2-5 to follow.
 1. Vermont Low and Zero Emission Vehicle Regulations, Agency of Natural Resources, pages 2-3
 2. Rules Governing the Licensing of Educators and the Preparation of Education Professionals, Vermont Standards Board for Professional Educators, page 4
 3. Disability Services-Developmental Services, Dept. of Disabilities, Aging and Independent Living, page 5
- No other business
- Next scheduled meeting is Monday, September 12, 2022 at 2:00 p.m.
- 4:05 p.m. meeting adjourned.

Proposed Rule: Vermont Low and Zero Emission Vehicle Regulations, Agency of Natural Resources

Presented By: Megan O'Toole, Rachel Stevens, Deirdra Ritzer and George Little

Motion made to accept the rule by Brenda Atwood, seconded by Diane Bothfeld, and passed unanimously except for Jen Mojo who abstained, with the following recommendations:

Implement suggested changes prior to filing with LCAR and public hearings:

1. Provided by Megan O'Toole in opening statement:
 - a. Have a public comment period of at least 60 days and host one public comment hearings in each of the following towns: Newport; Manchester; Burlington; Bellows Falls; Barre; and one virtually.
 - b. Host one stakeholder event that will focus specifically on the medium and heavy-duty rules, which will include:
 - i. Dealers in Vermont that sell medium and heavy-duty trucks;
 - ii. Fleet owners of medium and heavy-duty vehicles;
 - iii. County farm bureaus and the dairy farmers of American members and other stakeholders in the agricultural sector that own and operate fleets of medium and heavy duty vehicles;
 - iv. Municipalities;
 - v. Vermont Clean Cities Coalition and the Vermont Truck and Bus Association and other trade groups.
 - c. Prepare, distribute, and make available fact sheets and outreach materials to assist the public in understanding the benefits and impact of the rules.
 - d. Provide substantive statements about impacts related to each of the categories in the filing forms instead of referencing the information in summary statements.
 - e. In the Economic Impact Analysis include additional discussion of the overall electrification initiatives that were involved in and the impacts to the grid and the electrical infrastructure in the state of Vermont.
 - f. Articulate impacts to grid and electrical infrastructure in the rulemaking package.
 - g. Include additional detail on impacts to other stakeholders such as the dealers of both light duty vehicles and the medium and heavy-duty trucks throughout the state.
2. Be consistent with name of the rule throughout the filing forms and proposed rule.
3. Proposed Filing – Coversheet, #8: Add clarity around the California rule and the term low emissions.
4. Proposed Filing – Coversheet, #11: Add the State of Vermont Department of Building and General Services; CNS Grocery; and Dairy Co-ops for milking.
5. Proposed Filing – Coversheet, #12: Update to include more holistic measurement of direct and indirect economic impacts.
6. Proposed Filing – Coversheet, #13-15: Update once identified.
7. Economic Impact Analysis: Reference defined and less defined risks and potential impacts and efforts to identify those. Include information provided in supplemental statement.
 - a. Economic Impact Statement Supplemental Information, Affected parties, Costs and benefits to individuals: ACCII:
 - i. Clarify total costs avoided noted in Table 1.
 - ii. Include additional detail of estimated avoided social costs in Table 2.
 - iii. Review for typos and punctuation.
 - iv. Clarify paragraph on direct and indirect impacts on individuals. The third sentence appears to conflict with the first two sentences.
 - b. Alternatives to rule as proposed:
 - i. Articulate the lost progress, missed savings, backsliding and potential benefits.



8. Public Input Maximization Plan: Update to include steps taken in #1 above.
9. Public Input Maximization Plan, #4: Include the other agencies that you're coordinating with in adopting this rule.
10. Scientific Information Statement, #4: Append the incorporated California regulations to the Vermont regulations rather than just cite.

DRAFT

Economic Impact Analysis

Instructions:

In completing the economic impact analysis, an agency analyzes and evaluates the anticipated costs and benefits to be expected from adoption of the rule; estimates the costs and benefits for each category of people enterprises and government entities affected by the rule; compares alternatives to adopting the rule; and explains their analysis concluding that rulemaking is the most appropriate method of achieving the regulatory purpose. If no impacts are anticipated, please specify “No impact anticipated” in the field.

Rules affecting or regulating schools or school districts must include cost implications to local school districts and taxpayers in the impact statement, a clear statement of associated costs, and consideration of alternatives to the rule to reduce or ameliorate costs to local school districts while still achieving the objectives of the rule (see 3 V.S.A. § 832b for details).

Rules affecting small businesses (excluding impacts incidental to the purchase and payment of goods and services by the State or an agency thereof), must include ways that a business can reduce the cost or burden of compliance or an explanation of why the agency determines that such evaluation isn’t appropriate, and an evaluation of creative, innovative or flexible methods of compliance that would not significantly impair the effectiveness of the rule or increase the risk to the health, safety, or welfare of the public or those affected by the rule.

1. TITLE OF RULE FILING:

Vermont Low Emission Vehicle and Zero Emission Vehicle Rules

2. ADOPTING AGENCY:

Agency of Natural Resources

3. CATEGORY OF AFFECTED PARTIES:

LIST CATEGORIES OF PEOPLE, ENTERPRISES, AND GOVERNMENTAL ENTITIES POTENTIALLY AFFECTED BY THE ADOPTION OF THIS RULE AND THE ESTIMATED COSTS AND BENEFITS ANTICIPATED:

This rule is expected to impact individual and fleet vehicles owners, auto manufacturers, and individual Vermonters in general. For a complete explanation of the categories of affected parties potentially affected by this rule, please refer to the Economic Impact Statement Supplemental Information, attached.

4. IMPACT ON SCHOOLS:

INDICATE ANY IMPACT THAT THE RULE WILL HAVE ON PUBLIC EDUCATION, PUBLIC SCHOOLS, LOCAL SCHOOL DISTRICTS AND/OR TAXPAYERS CLEARLY STATING ANY ASSOCIATED COSTS:

This rule is expected to have an overall positive impacts on school districts related to public health benefits from improved air quality and potential cost savings of electric school buses. Additional costs for schools could be the need to install electric vehicle charging infrastructure. For a complete discussion of impacts on schools, please refer to the Economic Impact Statement Supplemental Information, attached.

5. ALTERNATIVES: *CONSIDERATION OF ALTERNATIVES TO THE RULE TO REDUCE OR AMELIORATE COSTS TO LOCAL SCHOOL DISTRICTS WHILE STILL ACHIEVING THE OBJECTIVE OF THE RULE.*

Pursuant to the Clean Air Act, the only alternative available for consideration is to not adopt the rules as proposed. For a complete discussion related to alternatives, please refer to the Economic Impact Statement Supplemental Information, attached.

6. IMPACT ON SMALL BUSINESSES:

INDICATE ANY IMPACT THAT THE RULE WILL HAVE ON SMALL BUSINESSES (EXCLUDING IMPACTS INCIDENTAL TO THE PURCHASE AND PAYMENT OF GOODS AND SERVICES BY THE STATE OR AN AGENCY THEREOF):

Small businesses that elect to take advantage of the opportunity that these rules provide by making more EVs available may see higher upfront vehicle purchase costs which may be offset by lower costs of vehicle ownership. For example, the Low NOx Heavy-Duty Omnibus rule will result in increased upfront cost of vehicle ownership, however consumer benefits, such as lengthened vehicle useful life and enhanced warranty requirements, should result in savings over the period of vehicle ownership. For a discussion of impacts to small businesses, please refer to the Economic Impact Statement Supplemental Information, attached.

7. SMALL BUSINESS COMPLIANCE: *EXPLAIN WAYS A BUSINESS CAN REDUCE THE COST/BURDEN OF COMPLIANCE OR AN EXPLANATION OF WHY THE AGENCY DETERMINES THAT SUCH EVALUATION ISN'T APPROPRIATE.*

Small business that elect to transition to electric technology may be eligible for financial and technical assistance via complimentary state programs. For a discussion of small business compliance assistance, please refer to the Economic Impact Statement Supplemental Information, attached.

8. COMPARISON:

COMPARE THE IMPACT OF THE RULE WITH THE ECONOMIC IMPACT OF OTHER ALTERNATIVES TO THE RULE, INCLUDING NO RULE ON THE SUBJECT OR A RULE HAVING SEPARATE REQUIREMENTS FOR SMALL BUSINESS:

If Vermont does not adopt or amend these rules, this will result in a reversion to the federal motor vehicle emission standards, which are less stringent and would represent significant regulatory backsliding. It would also stall or stifle in the progress Vermont has so far made in reducing criteria pollutant emissions and greenhouse gas emissions as a result of implementation of these rules. For a discussion of the comparison of the proposed rule to other alternatives, please refer to the Economic Impact Statement Supplemental Information, attached.

9. SUFFICIENCY: DESCRIBE HOW THE ANALYSIS WAS CONDUCTED, IDENTIFYING RELEVANT INTERNAL AND/OR EXTERNAL SOURCES OF INFORMATION USED.

To complete a thorough and sophisticated analysis of the emissions and economic benefits and impacts of the suite of rules proposed, Vermont has collaborated with several other "Section 177 states" and the Northeast States for Coordinated Air Use Management (NESCAUM). ANR's analysis uses models such as the Motor Vehicle Emission Simulator (MOVES) , the CO-benefits Risk Assessment Health Impacts Screening and Mapping Tool (COBRA) , and other tools to aid in understanding the how implementation of these rules will benefit Vermonters, and what economic impacts may result. For a discussion of the supporting resources for the proposed rule, please refer to the Economic Impact Statement Supplemental Information, attached.

Environmental Impact Analysis

Instructions:

In completing the environmental impact analysis, an agency analyzes and evaluates the anticipated environmental impacts (positive or negative) to be expected from adoption of the rule; compares alternatives to adopting the rule; explains the sufficiency of the environmental impact analysis. If no impacts are anticipated, please specify “No impact anticipated” in the field.

Examples of Environmental Impacts include but are not limited to:

- Impacts on the emission of greenhouse gases
- Impacts on the discharge of pollutants to water
- Impacts on the arability of land
- Impacts on the climate
- Impacts on the flow of water
- Impacts on recreation
- Or other environmental impacts

1. TITLE OF RULE FILING:

Vermont Low Emission Vehicle and Zero Emission Vehicle Rules

2. ADOPTING AGENCY:

Agency of Natural Resources

3. GREENHOUSE GAS: *EXPLAIN HOW THE RULE IMPACTS THE EMISSION OF GREENHOUSE GASES (E.G. TRANSPORTATION OF PEOPLE OR GOODS; BUILDING INFRASTRUCTURE; LAND USE AND DEVELOPMENT, WASTE GENERATION, ETC.):*

The transportation sector is one of the largest emitters of air contaminants, including greenhouse gases, in Vermont. Electrifying methods of transporting people and goods will reduce these emissions. Therefore, greenhouse gas emissions will decrease as a result of these rules and help to mitigate the impacts of climate change and improve air quality. For a discussion of greenhouse gas emission impacts of the proposed rule, please refer to the Environmental Impact Statement Supplemental Information, attached.

4. **WATER:** *EXPLAIN HOW THE RULE IMPACTS WATER (E.G. DISCHARGE / ELIMINATION OF POLLUTION INTO VERMONT WATERS, THE FLOW OF WATER IN THE STATE, WATER QUALITY ETC.):*

Indirect improvements to water quality in Vermont will occur as a result of these rules. For a discussion of water quality impacts of the proposed rule, please refer to the Environmental Impact Statement Supplemental Information, attached.

5. **LAND:** *EXPLAIN HOW THE RULE IMPACTS LAND (E.G. IMPACTS ON FORESTRY, AGRICULTURE ETC.):*

This rule is anticipated to improve air quality and mitigate the impacts of climate change in Vermont, which will have a positive impact on forest and agricultural lands in Vermont. For a discussion of land-use impacts of the proposed rule, please refer to the Environmental Impact Statement Supplemental Information, attached.

6. **RECREATION:** *EXPLAIN HOW THE RULE IMPACT RECREATION IN THE STATE:*

This rule is anticipated to improve air quality and mitigate the impacts of climate change in Vermont, which will have a positive impact on recreation opportunities in Vermont. For a discussion of recreation impacts of the proposed rule, please refer to the Environmental Impact Statement Supplemental Information, attached.

7. **CLIMATE:** *EXPLAIN HOW THE RULE IMPACTS THE CLIMATE IN THE STATE:*

This rule is anticipated to improve air quality and mitigate the impacts of climate change in Vermont, which will have a positive impact on the Vermont climate. For a discussion of climate impacts of the proposed rule, please refer to the Environmental Impact Statement Supplemental Information, attached.

8. **OTHER:** *EXPLAIN HOW THE RULE IMPACT OTHER ASPECTS OF VERMONT'S ENVIRONMENT:*

Overall, this rule is expected to improve all aspects of Vermont's environment through improvements to air quality and the mitigation of climate change impacts. For a discussion of other impacts, such as battery manufacturing and disposal, please refer to the

Environmental Impact Statement Supplemental Information, attached.

9. **SUFFICIENCY:** *DESCRIBE HOW THE ANALYSIS WAS CONDUCTED, IDENTIFYING RELEVANT INTERNAL AND/OR EXTERNAL SOURCES OF INFORMATION USED.*

To complete a thorough and sophisticated analysis of the emissions and economic benefits and impacts of the suite of rules proposed, Vermont has collaborated with several other "Section 177 states" and the Northeast States for Coordinated Air Use Management (NESCAUM). ANR's analysis uses models such as the MOtor Vehicle Emission Simulator (MOVES) , the CO-benefits Risk Assessment Health Impacts Screening and Mapping Tool (COBRA) , and other tools to aid in understanding the how implementation of these rules will benefit Vermonters, and what economic impacts may result. For a discussion and list of the sources used to inform this analysis, please refer to the Environmental Impact Statement Supplemental Information, attached.

Public Input Maximization Plan

Instructions:

Agencies are encouraged to hold hearings as part of their strategy to maximize the involvement of the public in the development of rules. Please complete the form below by describing the agency's strategy for maximizing public input (what it did do, or will do to maximize the involvement of the public).

This form must accompany each filing made during the rulemaking process:

1. TITLE OF RULE FILING:

Vermont Low Emission Vehicle and Zero Emission Vehicle Rules

2. ADOPTING AGENCY:

Agency of Natural Resources

3. PLEASE DESCRIBE THE AGENCY'S STRATEGY TO MAXIMIZE PUBLIC INVOLVEMENT IN THE DEVELOPMENT OF THE PROPOSED RULE, LISTING THE STEPS THAT HAVE BEEN OR WILL BE TAKEN TO COMPLY WITH THAT STRATEGY:

In addition to complying with the public engagement requirements of the APA, the Agency is creating additional opportunities for public engagement in accordance with the rulemaking outreach requirements of the Global Warming Solutions Act. The GWSA requires that the Agency conduct public hearings across the state and in areas that are disproportionately impacted by climate change. ANR will hold six public meetings related to this rule. Two hearings will be held in accordance with procedural requirements of the APA, and four events will be held to meet the obligations of the GWSA with the assistance and support of Regional Planning Commissions and other local partners. Details on the four GWSA meeting events will be available on climatechange.vermont.gov. Updates and information about the proposed rules have also been, and will continue to be, provided separately and routinely at meetings of the Climate Council and its subcommittees

Public Input

and task groups, which are publicly accessible and recorded at climatechange.vermont.gov.

ANR will also hold a meeting specifically for medium- and heavy-duty stakeholders to address technical and compliance details of the Advanced Clean Trucks, Low NOx Heavy-Duty Omnibus, and the Phase 2 Greenhouse gas standards.

4. BEYOND GENERAL ADVERTISEMENTS, PLEASE LIST THE PEOPLE AND ORGANIZATIONS THAT HAVE BEEN OR WILL BE INVOLVED IN THE DEVELOPMENT OF THE PROPOSED RULE:

The Vermont Climate Council and its subcommittees and task groups.

The Agencies and Departments that participate in the Vermont Interagency Committee on Energy Policy and Climate.

The Northeast States for Coordinated Air Use Management

The California Air Resources Board

Vehicle and fleet operators in Vermont

Scientific Information Statement

THIS FORM IS ONLY REQUIRED IF THE RULE RELIES ON SCIENTIFIC INFORMATION FOR ITS VALIDITY.

PLEASE REMOVE THIS FORM PRIOR TO DELIVERY IF IT DOES NOT APPLY TO THIS RULE FILING:

Instructions:

In completing the Scientific Information Statement, an agency shall provide a summary of the scientific information including reference to any scientific studies upon which the proposed rule is based, for the purpose of validity.

1. TITLE OF RULE FILING:

Vermont Low Emission Vehicle and Zero Emission Vehicle Rules

2. ADOPTING AGENCY:

Agency of Natural Resources

3. BRIEF EXPLANATION OF SCIENTIFIC INFORMATION:

For an explanation of scientific information, please see the Scientific Information Statement Supplemental Information document, attached.

4. CITATION OF SOURCE DOCUMENTATION OF SCIENTIFIC INFORMATION:

For citations of source documentation, please see the Scientific Information Statement Supplemental Information document, attached.

5. INSTRUCTIONS ON HOW TO OBTAIN COPIES OF THE SOURCE DOCUMENTS OF THE SCIENTIFIC INFORMATION FROM THE AGENCY OR OTHER PUBLISHING ENTITY:

To obtain copies of source documents, please contact megan.otoole@vermont.gov.

Incorporation by Reference

THIS FORM IS ONLY REQUIRED WHEN INCORPORATING MATERIALS BY REFERENCE. PLEASE REMOVE PRIOR TO DELIVERY IF IT DOES NOT APPLY TO THIS RULE FILING:

Instructions:

In completing the incorporation by reference statement, an agency describes any materials that are incorporated into the rule by reference and how to obtain copies.

This form is only required when a rule incorporates materials by referencing another source without reproducing the text within the rule itself (e.g., federal or national standards, or regulations).

Incorporated materials will be maintained and available for inspection by the Agency.

1. **TITLE OF RULE FILING:**

Vermont Low Emission Vehicle and Zero Emission Vehicle Rules

2. **ADOPTING AGENCY:**

Agency of Natural Resources

3. **DESCRIPTION** (*DESCRIBE THE MATERIALS INCORPORATED BY REFERENCE*):

Please see the attached supplemental Scientific Information.

4. **FORMAL CITATION OF MATERIALS INCORPORATED BY REFERENCE:**

Please see the attached supplemental Scientific Information.

5. **OBTAINING COPIES:** (*EXPLAIN WHERE THE PUBLIC MAY OBTAIN THE MATERIAL(S) IN WRITTEN OR ELECTRONIC FORM, AND AT WHAT COST*):

Contact megan.otoole@vermont.gov for copies of referenced materials.

6. **MODIFICATIONS** (*PLEASE EXPLAIN ANY MODIFICATION TO THE INCORPORATED MATERIALS E.G., WHETHER ONLY PART OF THE MATERIAL IS ADOPTED AND IF SO, WHICH PART(S) ARE MODIFIED*):

N/A

**Vermont Low Emissions and Zero Emission Vehicle Rule
Final Proposed Rule
Responsiveness Summary**

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Administrative Procedure Act Requirement

This Responsiveness Summary meets the Agency of Natural Resources’ (ANR) obligations under the Vermont Administrative Procedure Act to consider fully all written and oral submissions concerning the proposed rule and issue an explanation on why the agency overruled the arguments and considerations against the rule. Specifically, “[w]hen an agency decides in a final proposal to overrule substantial arguments and considerations raised for or against the original proposal or to reject suggestions with respect to separate requirements for small businesses, the final proposal shall include a description of the reasons for the agency's decision.” 3 V.S.A. §841(b)(2).

Background and Opportunities for Public Comment

On August 12, 2022, ANR filed the Proposed Rules with the Secretary of State’s office. Following the filing, ANR hosted a series of five public events pursuant to its obligations under the Vermont Global Warming Solutions Act (GWSA), 10 V.S.A. §593(c), including an informational meeting on the proposed medium- and heavy-duty truck regulations for stakeholders. ANR also held two public hearings on

September 21 and 23, pursuant to its obligations under the Administrative Procedures Act, 3 V.S.A. §840. Verbal comments were made and recorded at all of the above events and hearings. Audio files of the recordings of the above public events are available from ANR upon request. Written comments were solicited and collected via email, mail, and fax. Written comments were collected from a total of 340 individuals and entities, and are included in this filing.

Written and verbal comments received are categorized below into sections that represent the subject area of the comment received. Due to the volume of comments received and recorded, and the fact that many commenters raised similar or the same arguments and considerations for or against the original proposal, ANR has paraphrased similar comments and provides responses in the following Responsiveness Summary.

Note that many of the public comments received are considered “out of scope” of the regulation. However, ANR, along with its state Agency partners, has responded to these comments in this summary recognizing that they are in the scope of the broader implications of the direct and indirect impacts of the proposed rule on Vermont’s transportation fleet and sector.

Acronyms

Advanced Clean Cars II (ACCII)

Advanced Clean Truck (ACT)

Agency of Natural Resources (ANR)

Argonne National Laboratory (ANL)

Capacity, Energy, Loads, and Transmission (CELT)

Clean fuels standard (CFS)

Direct current fast charger (DCFC)

Electric vehicle (EV)

Environmental justice (EJ)

Environmental Protection Agency (EPA)

Fine particulate matter (PM2.5)

Greenhouse gas (GHG)

Global Warming Solutions Act (GWSA)

Gross Vehicle Weight Rating (GVWR)

Internal combustion engine vehicles (ICEVs)

Long-Range Transmission Plan (LRTP)

Near zero emission vehicles (NZEV)

Nitrogen oxide (NOx)

Northeast States for Coordinated Air Use Management (NESCAUM)

Plug-in hybrid vehicles (PHEV)

Social cost of carbon (SC-CO2)

Total cost of ownership (TCO)

Vehicle to Grid (V2G)

Vermont Electric Power Company (VELCO)

Zero emission vehicle (ZEV)

Comments and Responses

General Comments

Comment-G1: The majority of comments received were generally supportive of the rules, as proposed, citing concerns about climate change, air quality, and the benefits of phasing-in/transitioning to electric vehicle technology as a way to mitigate the impacts of climate change and improve air quality, specifically from the transportation sector in Vermont. Many commenters requested that ANR implement the proposed rules as soon as possible. Some commenters, that represent the auto manufacturing industry, commented that their vehicles currently being manufactured are proof that the proposed regulations are achievable. Many commenters feel that transitioning to EVs represents a cost savings when compared to the total cost of ownership of owning a conventional fossil fueled vehicle.

Response-G1: ANR acknowledges these comments. No changes were made in response to these comments.

Comment-G2: Some commenters support the rules as proposed due to their significant positive impact on public health and in protection of the 63,000 Vermont adults and children that suffer from asthma.

Response-G2: ANR acknowledges this comment and agrees that the proposed rule will have a significant positive impact on the health of Vermonters.

Comment-G3: One commenter is concerned that the rules focus too heavily on reducing petroleum use to power motor vehicles, and that there is not enough policy focused on climate change being caused primarily by population growth.

Response-G3: ANR agrees that policies to reduce emissions from the transportation sector cannot be restricted to fuel switching. ANR works with its agency partners including, the Agency of Transportation (VTrans), the Agency of Commerce and Community Development, and the Department of Public Service, to identify and implement policies that increase efficiency of our transportation system and reduce the number of vehicle miles traveled in the state. A focus on coordinating land-use, transportation, and

environmental policy will be critical to ensure emissions continue to go down despite potential increases in population. No changes were made in response to this comment.

Comment-G4: One commenter thinks electrification of transportation should be driven by innovation, research and efficiency, and not regulations and prohibitions.

Response-G4: Historically, the Low and Zero Emission Vehicle rules have been considered “technology forcing”, meaning that they require automakers to incorporate emission reduction technology into the vehicles they manufacture to meet air quality goals in the participating states. Overtime, as consumer demand for cleaner vehicles has increased and advancements in battery technology and vehicle efficiency have progressed, automakers have made commitments regarding vehicle production and sales that now mirror ANR’s proposed rules. Therefore, ANR regards these proposed rules as a codification of the commitments that automakers have already made, and therefore the rules regarding vehicle electrification are being driven by innovation, research and efficiency. No changes were made in response to this comment.

Comment-G5: Some commenters are concerned that if they purchase a vehicle outside of Vermont, that they won’t be able to register it in Vermont.

Response-G5: Since the adoption of this program over 20 years ago, all new motor vehicles up to 14,000 pounds Gross Vehicle Weight Rating (GVWR) must be California certified in order to be registered in Vermont regardless of where they are purchased. Used vehicles – or those not meeting the definition of “new” – can be purchased in or outside of Vermont and registered in Vermont regardless of California certification. Under the proposed rules, the applicability of this requirement expands to cover heavier vehicles; therefore, light-, medium- and heavy-duty vehicles that meet the definition of “new” – having 7,500 miles or less on the odometer – will need to be certified by California in order to be sold and registered in Vermont. Starting with MY2026, new heavy-duty trucks purchased outside of Vermont and subsequently registered must be California certified.

Note that California certified new diesel heavy-duty trucks will continue to be available for sale in Vermont beyond 2035, and California certified new light-duty gasoline vehicles will continue to be available for sale until 2035. California certification is also not required for emergency vehicles, new purchases made by nonresidents prior to establishing Vermont residency, inherited vehicles, vehicles exclusively for off-highway use, and other exempted vehicles listed in Section 5-1103 (b) and (c).

Travel of purchasers to other states is currently taking place for a number of reasons unrelated to whether the vehicle is a zero emission vehicle (ZEV), plug-in hybrid electric vehicle (PHEV), or internal combustion engine vehicle (ICEVs). Buyers may purchase a vehicle over state lines for a number of reasons including convenience (*i.e.*, the closest dealer to the buyer may be located in another state) or to find a specific make, model, or different cost. No changes were made in response to this comment.

Comment-G6: One commenter asserted that other states are declining to adopt similar amendments to their motor vehicle emissions standards.

Response-G6: Eighteen states have adopted motor vehicle emission standards that are more stringent than the federal government's standards. To date, Vermont is joined by California, Massachusetts, New York, Oregon, and Washington in undergoing a rulemaking process to adopt the ACCII amendments. California, Colorado, North Carolina, Massachusetts, New Jersey, New York, Oregon, and Washington have adopted, or are in the process of adopting, the medium- and heavy-duty truck rules. No changes were made in response to this comment.

Comment-G7: One commenter thinks that vehicles delivered pursuant to the proposed rule should be designed to be accessible to all persons.

Response-G7: ANR appreciates this comment and agrees that physical accessibility is important. Physical accessibility requirements of motor vehicles, however, are outside of the scope of this regulation. Standards related to physical accessibility are within the jurisdiction of the Federal Department of Transportation. No changes were made in response to this comment.

Comment-G8: Some commenters note that the language of the rule and statements made in the summary documents indicate that the rules require that individuals and businesses buy electric vehicles (EVs), or in other words, there is a "sales" requirement. This is inconsistent with ANR's statements that this rule only applies to automakers.

Response-G8: The Advanced Clean Cars II (ACCII) regulation imposes requirements on vehicle manufacturers to produce and deliver for sale ZEVs in Vermont, while the Advanced Clean Truck (ACT) regulation imposes requirements on vehicle manufacturers to produce and sell ZEVs in Vermont. Individuals and businesses are not required to purchase electric vehicles under the proposed regulations. Under the ACCII rule, new ICEVs will be available for sale in Vermont until model year 2035 and under the ACT regulation new diesel heavy-duty trucks will continue to be available for sale in Vermont before and after 2035 while providing an increased choice for fleets when making decisions about what vehicle will best suit their needs. The ACT regulation includes flexibility for manufacturers to produce and sell new ZEVs into the market segments they deem to be most suitable for the products they manufacture, ensuring that manufacturers develop competitive ZEV products at price points that will meet fleet needs. Used vehicles are outside of the scope of the rules and used ICEVs will continue to be available for sale in Vermont. Based on this comment, ANR has revised the technical support document, entitled *Supplemental Information for Vermont's Low Emission Vehicle and Zero Emission Vehicle Proposed Rules*, and *Regulation Summary Document* to further clarify that the ACCII and ACT regulations impose requirements on vehicle manufacturers and that individuals and businesses are not required to purchase electric vehicles.

Comment-G9: Some commenters are concerned that if a dealer's lot is required to have a certain percentage of zero-emission trucks for sale, when a dealer sells all the diesel trucks on their lot, the ACT regulation would not allow for them to then sell additional diesel trucks if there is a demand for them and, as a result, Vermont businesses needing a truck after the allotment of diesel trucks are sold will be forced to purchase a ZEV.

Response-G9: The above scenario is inaccurate because the ZEV sales structure used under the ACT regulation is comprised of a credit and deficit system that includes flexibility that can be used to avoid

such a scenario. Selling diesel trucks into Vermont generates deficits, while selling ZEVs or NZEVs (near zero emission vehicles) into Vermont generates credits. Credits can be banked and traded, and manufacturers having more deficits than credits in a given model year are provided additional time to comply as they must make up the deficit by the end of the following model year. In addition, the credit and deficit system uses weight class modifiers, which allow for heavier vehicles that produce more emissions to generate more deficits and, as ZEVs, generate more credits. The use of weight class modifiers gives manufacturers flexibility and maintains emissions benefits. A manufacturer also has the option of using credits from a weight class to make up deficits in other weight classes. Also, manufacturers can choose to build ZEVs in one weight class or across all weight classes. No changes were made in response to these comments.

Comment-G10: With the recent setbacks in implementing the Transportation Climate Initiative Program in the Northeast, and the lack of any other clear policy or regulatory tools to achieve certain and significant pollution reductions in the transportation sector, adopting the Rules in a timely fashion is critical to meeting Vermont's emissions requirements.

Response-G10: ANR acknowledges this comment. The adoption of the proposed rules is a cornerstone in the Transportation sector emission reduction strategy in Vermont's Climate Action Plan. Emission reductions expected via the adoption of the proposed rules is included in the technical support document, entitled *Supplemental Information for Vermont's Low Emission Vehicle and Zero Emission Vehicle Proposed Rules*. Pursuant to the GWSA, ANR is required to adopt these rules by December 1, 2022.

Comment-G11: Enacting the Rules will reduce the sources of toxic air pollution, providing meaningful benefits to Vermonters.

Response-G11: ANR acknowledges this comment and agrees that the proposed rules will reduce the emission of GHGs and air contaminants and will result in improvements in public health and air quality.

Comment-G12: One commenter requested that ANR adopt a fleet reporting requirement for Advanced Clean Trucks in a subsequent 2023 rulemaking.

Response-G12: ANR considered adding a fleet reporting requirement, as other jurisdictions have done, to better understand the number and size of fleets with five or more vehicles in Vermont. A reporting program of any size requires additional staff resources, as well as administrative tools and information technology (IT) resources. For example, Oregon stood up a reporting program with their ACT rule that required the addition of two full-time employees (FTEs) to their existing staff. Similarly, New Jersey estimates they will need five additional FTEs. Currently, ANR's Mobile Sources Program does not have capacity to implement or manage a reporting requirement. ANR hopes that, with additional resources, a reporting program can be implemented in the future. No changes were made in response to this comment.

Comment-G13: Comments were made requesting that ANR modify the early action credit program in Advanced Clean Trucks to limit it to only one year before the rule is enforced. Conversely, one

commenter requested the rule be revised to allow for automakers to generate early compliance credits as early as model year 2023 under ACT, instead of 2024 as currently proposed.

Response-G13: Early action credits allow EV makers to begin earning compliance credits ahead of the formal regulatory obligation and incentivize accelerated deployment of EVs in the state. As a result, reductions in air pollution and greenhouse gas emissions are realized sooner, which include important benefits for public health and Vermont’s climate goals. Additionally, growing the zero-emission truck industry more quickly to large-scale production will help to move costs down the cost curve. To be consistent with California and incentivize early EV deployment in Vermont, ANR is revising the proposed rule to allow manufacturers to earn early compliance credits starting in model year 2023 under the ACT regulation. Early credits may be earned starting in model year 2021 in California in advance of the 2024 model year start date. Similarly, with this revision, early credits may be earned in model year 2023 in Vermont in advance of the 2026 model year start date. The 2023 start date for early credits in Vermont now reflects the interval between California and Vermont adoptions. This change has been made to Section 40-106(a)(11) of the proposed rule.

Comment-G14: One commenter recommends that Vermont take additional steps beyond this rulemaking, including implementing a clean fuels standard (CFS) and establishing durable and effective EV purchase incentives that includes medium-duty vehicles.

Response-G14: ANR, in coordination with other state agencies and the Vermont Climate Council, continues to investigate the feasibility and cost-effectiveness of other greenhouse gas (GHG) emission reduction policies to compliment the proposed rules. ANR acknowledges that complimentary policies, especially incentive programing for all vehicle weight classes, will be necessary to ensure that vehicles delivered to Vermont are placed in service, and ideally replace a conventional vehicle, to realize the emission reduction benefits outlines in the technical support document. No changes were made in response to this comment.

Comment-G15: One commenter stated that the proposed rules should not be adopted until: at least one half of the member states of Northeast States for Coordinated Air Use Management (NESCAUM) have adopted the rules, the federal government has adopted rules that are the same as ANR’s proposed rules, and California has demonstrated that their rules are workable within their electric infrastructure.

Response-G15: Vermont has worked closely with NESCAUM states in adopting and implementing motor vehicle emission standards since the 1990s. All but one of the NESCAUM states, and 18 states in total, have adopted some of California’s regulatory programs, and several have already or are currently updating their rules to be consistent with ANR’s proposed rules. President Biden’s Executive Order (EO) No. 14037, *Strengthening American Leadership in Clean Cars and Trucks*, establishes new federal targets increasing the percentage of all new passenger car and light truck sales that are ZEVs. The EO directs the Environmental Protection Agency (EPA) to coordinate setting standards with California, “as well as other States that are leading the way in reducing vehicle emissions, including by adopting California’s standards.” This EO is a supportive of California’s ZEV standards and the language in the EO suggests that the states adopting California’s standards may be better positioned to ensure their state priorities are considered in federal policies. While California has made statements about the feasibility of its rule,

the opportunity for revisions to the proposal will occur during periodic reviews to evaluate rule applicability and feasibility. Vermont will participate in those review opportunities. Further, delay in rules adoption would cause a delay in the modeled air quality and public health benefits that ANR anticipates will result from the proposed rules. No changes were made in response to this comment.

Technology

Comment-T1: The requirements of the rule are being implemented too quickly. There are not enough EVs available (light, medium, or heavy-duty) and not enough charging infrastructure to support EV adoption.

Response-T1: ANR acknowledges that shifting the way in which we power and fuel our modes of transport is a massive and significant undertaking. These rules support this transition by requiring automakers to manufacture and deliver more electric vehicles to Vermont in a phased and measured manner spanning a thirteen-year period. For both Advanced Clean Cars II and Advanced Clean Trucks, the phase in of vehicles that will be delivered reflect the expected developments in supply, technology, application, and feasibility. Many automakers have made commitments related to the phase-in of EVs that are consistent with, or in some cases more stringent than, the proposed rule. It also reflects the fact that EV fueling infrastructure is not yet as prevalent as gasoline or diesel fueling infrastructure. For ACT, a total phase in of EV technology is not contemplated in the proposed rule. The percent of EV trucks that automakers will deliver is capped at 75%, which represents the most stringent percentage as applied to a limited range of weight classes. And even then the 75% requirement for automakers will not take place until 2035.

Comment-T2: Some commenters noted EV technology concerns for medium- and heavy-duty vehicles including reduced payload due to increased vehicle weight, long charging times, and limited range. State of the art heavy duty electric vehicle technology does not come close to performing the daily requirements of a feed truck, particularly in Vermont. Cold temperatures, hilly roads and onsite delivery demands will quickly reduce heavy duty truck performance to well below required performance rates. Further, recharging times, even if recharging infrastructure is available, would require hours per day to recharge in contrast to minutes per day for diesel refueling. Other commenters indicated heavy-duty electrification may not be appropriate for certain applications such as milk-hauling, logging trucks, grain trucks, and sap trucks. One commenter noted that ANR is forcing the use of heavy-duty electric vehicles in the commercial truck industry before the technology has proven to be available, effective, economically competitive, and practically appropriate.

Response-T2: The proposed ACT regulation imposes requirements on vehicle manufacturers to produce and sell on-road ZEVs in Vermont and does not impose requirements on fleets to make EV purchases. The proposed rules do not apply to off-road equipment. Equally important to note is that the regulation does not prescribe requirements specific to vocation; therefore, manufacturers are free to decide which vehicles they should electrify based on business drivers specific to the manufacturer such as product portfolio and customer base. Because the proposed regulation does not obligate manufacturers to sell EVs to vocations that are not well-suited for electrification, it is highly unlikely that manufacturers will focus their product offerings to fleets poorly suited for electrification. Accordingly, heavy-duty EV

adoption is expected in well-suited fleets first, and then broadening over time as costs decline and fleet experience with the technology improves.

Under the ACT regulation, new diesel heavy-duty trucks will continue to be available for sale in Vermont before and after 2035 while providing an increased choice for fleets when making decisions about what vehicle will best suit their needs. The ACT regulation includes flexibility for manufacturers to produce and sell new ZEVs into the market segments they deem to be most suitable for the products they manufacture, ensuring that manufacturers develop competitive ZEV products at price points that will meet fleet needs. Used vehicles are outside of the scope of the rules and used ICEVs will continue to be available for sale in Vermont. No changes were made in response to these comments.

Comment-T3: Some commenters are concerned that there is limited vehicle availability for both EVs (all-wheel and 4-wheel drive models, in particular) and ICEVs.

Response-T3: Vehicle supply, both EV and ICEV types, is lower than normal currently due to pandemic recovery and associated supply chain issues. Supply of EVs is expected to increase as manufacturers ramp up production to meet demand, supply issues are alleviated, and to meet the increasing stringency of the ZEV sales requirements of the proposed rule. Pick-up trucks, sport utility vehicles (SUVs) and hatchbacks with two-wheel drive and four-wheel drive options are available in EV models now, with even more coming in the next year or two to meet a variety of applications and needs. To see models currently available in Vermont, visit: <https://www.driveelectricvt.com/find-your-ev/compare-models>. No changes were made in response to this comment.

Comment-T4: Plug-in hybrid vehicles (PHEV) should be counted towards an automaker meeting its annual ZEV percent sales requirement.

Response-T4: Manufacturers can meet a portion of their annual ZEV requirement under ACCII and ACT with PHEVs, note that ACT refers to PHEVs as Near Zero Emission Vehicles (NZEV). No changes were made in response to the comment.

Comment-T5: PHEVs should NOT be counted towards an automaker meeting its annual ZEV percent sales requirements.

Response-T5: PHEVs are powered by both an internal combustion and battery-electric powertrain, which have the ability to operate as a zero-emission vehicle for some distance. These vehicles are considered a bridge technology, especially as applied in ACT, which will help the advancement of the full ZEV market by electrifying more challenging sectors and supporting the ZEV supply chain. Under ACCII, up to 20% of a manufacturer's ZEV requirement can be met with PHEV values in a given model year and under ACT, up to 50% of a manufacturer's ZEV requirement can be met with NZEV credits. The amount of PHEV credits that can be used in a given model year to meet a manufacturer's ZEV requirement are capped to preserve emissions reductions achieved while providing for a level of compliance flexibility. No changes were made in response to this comment.

Comment-T6: The range of an EV is reduced in colder temperatures, reducing range and efficiency of the vehicle.

Response-T6: Not unique to electric vehicles, cold weather reduces efficiency of all vehicle types. Electric vehicles can be driven in both extremely hot and cold weather. Cold weather can reduce range, but with longer-range electric vehicles on the market, with a little planning this won't impact the vehicles' ability to get you where you need to go. Also, some auto makers are adding technologies that help control the temperature of the battery to counteract impacts from extremely hot or cold weather. Electric vehicles are already popular and feasible for drivers in the Northeast and East Coast and make up over 70% of all car sales in Norway.

Electric vehicles are designed to perform the same or better than the gasoline vehicles they replace. Electric vehicles have high torque which help them accelerate quickly and get up steep inclines. Today's vehicles have more electric range, leaving plenty of margin for mountain driving. And electric vehicles benefit from downhill driving which allows regenerative braking to put energy back into the battery, extending how far you can go. No changes were made in response to this comment.

Purchase cost and Total Cost of Ownership

Comment-TCO1: Some commenters have concerns regarding the upfront vehicle cost for an EV being more than a conventional ICE vehicle. One commenter stated that for medium- and heavy-duty vehicles, the cost of owning an EV includes battery replacement costs. Some commenters are concerned that the rules will reduce affordability of vehicles and reduce the choice consumers have when purchasing a vehicle.

Response-TCO1: ANR acknowledges that a significant barrier to EV adoption *today* is the increased upfront cost of an EV compared to a conventional fossil-fuel powered vehicle. However, as the cost of batteries continues to drop, the price of a battery-electric vehicle will eventually become the same as a combustion engine vehicle. And while, for now, the up-front cost is higher, ANR's analysis in the *Supplemental Information for Vermont's Low Emission Vehicle and Zero Emission Vehicle Proposed Rules* shows that the "total cost of ownership" or "TCO" of an EV compared to a conventional vehicle can be lower due to lower fuel and vehicle maintenance costs. There are also several incentive programs available in Vermont and from the federal government that help to bring the upfront costs of EVs down to be comparable to conventional vehicles, and in some cases less expensive¹.

Across all vehicle weight classes, ACCII and ACT will mean that consumers have *increased* choice when making decisions about what vehicle will best suit their needs. For passenger cars and light-duty trucks, the phase-in proposed in ACCII reflects the fact that EV technology will be appropriate and feasible for most applications of these types of vehicles. For medium- and heavy-duty vehicles, the phase-in proposed in ACT reflects the fact that EV technology and its application across all uses of these types of vehicles will take longer. For heavier vehicles, ANR recognizes that EV technology may not be feasible for all applications in the time horizon (up to 2035) contemplated by ACT, and that's why the rule still allows automakers to deliver conventional vehicle technologies to Vermont indefinitely. The proposed rule will give consumers and fleet owners access to electric vehicles in order to recognize the significant total cost of ownership savings associated with EVs compared to conventional vehicles.

¹ Drive Electric Vermont Incentives: <https://www.driveelectricvt.com/incentives>

Comment-TCO2: One commenter believes the potential profits seen from vehicle to grid should be considered in ANR's cost analyses.

Response-TCO2: ANR considers vehicle to grid (V2G) to be a developing opportunity where unused power from the vehicle is put back into the electric grid. There is potential for V2G integration to help supply electricity during peak hours, provide an extra power source during times when renewable energy sources, such as solar, are unavailable, and supply power during electrical outages. EV owners can be compensated for sending electricity back into the grid at peak demand events, thereby reducing demand. Currently there are multiple pilots underway in Vermont and ANR will continue to consider benefits from V2G as the technology evolves. No changes were made in response to this comment.

Comment-TCO3: Some commenters expressed concerns regarding uncertainty about the cost of electricity and Vermont's GHG emissions from electricity going up with vehicle electrification.

Response-TCO3: The residential price of electricity depends on a combination of costs related to generating power, ensuring sufficient generation and transmission capacity, maintaining poles, wires, and the crews that service them, and other factors. These electricity price components will move in different directions with additional EV charging and the net effect is unclear. Unrelated factors are most impactful on the price of electricity, such as the price of natural gas used for a portion of New England's power generation and the outcome of capacity auctions used to ensure sufficient generation resources.

Looking solely at its effects, additional EV charging will have upward rate pressure on generation (because more generation will be required), unknown rate pressure on capacity and transmission costs (because much charging will occur outside peak hours), and unknown rate pressure on distribution system costs (because existing fixed costs and the cost of system upgrades will be balanced by additional electricity sales occurring during off-peak hours).

While the net effect on electricity price is unknown, it is likely that the equivalent cost of fueling a vehicle with electricity will remain lower than the cost of fueling with gasoline or diesel. Again, it should be emphasized that off-peak load growth through EV charging will be a minor factor in the price of electricity compared to external factors such as market power prices influenced by national natural gas prices and the interconnection of additional price-competitive generation resources (namely off-shore wind). No changes were made in response to this comment.

Comment-TCO4: The increased cost of electricity that businesses must bear in order to charge these vehicles, the cost of which has only been increasing in recent years, will drive up the cost of goods and services in Vermont, especially for small businesses.

Response-TCO4: ANR has evaluated and included "total cost of ownership" analyses as part of the economic analysis that show that the most significant savings in owning and operating an EV comes from saving money on the cost of fuel. Operating a vehicle using electricity is less expensive than operating a vehicle with gasoline or diesel. The price of electricity tends to be less volatile, and is regulated by the Public Utilities Commission in Vermont. The price of fossil fuels is more volatile than electricity, is unregulated, and is subject to frequent market impacts. Any costs related to electrical

upgrades to accommodate home vehicle charging have been taken into account in ANR’s TCO analysis in the *Supplemental Information for Vermont’s Low Emission Vehicle and Zero Emission Vehicle Proposed Rules*. No changes were made in response to this comment.

Comment-TCO5: Some commenters are concerned that the maintenance and upkeep costs of an EV are higher, especially considering battery replacement costs.

Response-TCO5: The costs of maintenance and scheduled repairs for ZEVs and PHEVs are expected to be lower than that of an equivalent ICEV. The Argonne National Laboratory (ANL) has provided estimates of incremental maintenance costs that are below that of an ICEV based on vehicle technology type and miles driven.² For battery electric vehicles (BEVs), a type of ZEV, the average cost of maintenance and planned repairs is approximately 40% lower than a gasoline passenger car, for example, due to fewer oil changes, oil filters, timing belts and other replacement parts (spark plugs and oxygen sensors, for example). The per-mile maintenance savings for this analysis was extracted from the ANL study for passenger vehicles of each drivetrain type and then adjusted using incremental vehicle costs to estimate the per mile savings for the other vehicle types.

Estimated incremental maintenance costs for each vehicle classification and powertrain type, in dollars per mile (values in parentheses are negative values, indicating savings relative to a comparable internal combustion engine vehicle):

Vehicle Types	Average dollar per mile savings 2026 - 2035
BEV – Passenger Car	(0.040)
BEV – Light Duty Truck 1	(0.039)
BEV – Light Duty Truck 2	(0.053)
BEV – Medium duty vehicle	(0.091)
PHEV – Passenger Car	(0.007)
PHEV – Light Duty Truck 1	(0.009)
PHEV – Light Duty Truck 2	(0.007)
PHEV – Medium Duty Vehicle	(0.007)

While the cost of battery replacement may be incurred, it is important to note that the durability and warranty requirements of the proposed rule ensure that consumers will not have to bear the cost of a battery replacement in advance of the battery’s useful life within the warranty period. No changes were made in response to this comment.

Alternatives to the Regulation

Comment-A1: Some commenters think that consideration should be given to other fuel types including renewable fuels, alternative fuels, low-carbon fuels and technologies for on-board capture of combustion-related carbon dioxide.

Response-A1: The goal of the proposed ACT regulation is to accelerate the widespread adoption of zero-emission medium- and heavy-duty vehicles to reduce harmful vehicle emissions. Alternative,

² ANL 2021 Report: <https://publications.anl.gov/anlpubs/2021/05/167399.pdf>

renewable, and/or low carbon fuels may play a role in furthering reduction of vehicle emissions under the Low-NOx Omnibus regulations, which is part of ANR's proposed rule package. Provisions that allow manufacturers to earn credit for deploying cleaner internal combustion engines earlier than required or engines meeting more stringent emissions standards than required are included in the proposed Low-NOx Omnibus regulation. These credit opportunities are open to any fuel type cleaner engine and the advances already made by natural gas and propane engines that currently certify to CARB's optional reduced nitrogen oxide (NOx) standard (0.02 g/bhp-hr) provide a substantial head-start toward complying with all the proposed requirements as compared to other engines. Commenters' concerns about the rules not supporting or accommodating alternative fuel technologies is addressed in the proposed Low-NOx Omnibus regulation, therefore no changes were made in response to this comment.

Further, Vermont's Climate Action Plan does include the use of alternative fuels to decarbonize Vermont's fleet, but strategies including fuel shifting shouldn't exclude electrification³. From a cost-per-ton of emission reduction perspective, strategies to increase use of these alternative fuels are comparably more costly to implement based on the cost-per-ton of emissions reduced than the deployment of electric vehicles at the scale we need to meet our GHG reduction requirements in the Global Warming Solutions Act.⁴

Electric Vehicle Supply Equipment (EVSE)

Comment-EVSE1: Some commenters are concerned about the cost of installing EV charging infrastructure, both for individuals and businesses, and some are concerned that chargers available today are not reliable and experience too much "down time".

Response-EVSE1: The most convenient and affordable place for private, passenger vehicles to charge is expected to be at home, where vehicles are often parked overnight for many hours at a time. Charging a car at home can be as easy as plugging in the convenience cord that comes with an electric vehicle into a 110 Volt plug. This type of charging is known as Level 1 and can provide about 3-6 miles of range for each hour a car is plugged in. When plugged in overnight a Level 1 charge may provide enough range to meet shorter daily driving trips. However, if your daily driving distances are longer, and you need a faster charge to fully re-charge your battery every night, you may want to install a Level 2 charger at your home which provides about 14-35 miles of range per hour of charging. Many electric utilities in Vermont offer free or subsidized Level 2 chargers with the purchase of an EV⁵. With the new Advanced Clean Cars II proposal, starting with model year 2026, electric vehicles will be required to come with a convenience cord that can charge at both Level 1 and 2 and will reduce the cost for home charging. Installing EV charging in private or public parking lots, such as workplace parking lots, multiunit residential parking lots, and public parking lots can be more challenging and expensive to install. To help overcome these cost barriers and ensure access to a network of chargers that can meet all EV driver's

³ Vermont Initial Climate Action Plan, 2021:

<https://outside.vermont.gov/agency/anr/climatecouncil/Shared%20Documents/Initial%20Climate%20Action%20Plan%20-%20Final%20-%202012-1-21.pdf>.

⁴ Vermont Pathways Marginal Abatement Cost Curve Report, 2022:

<https://outside.vermont.gov/agency/anr/climatecouncil/Shared%20Documents/MAC%20Curve%20Deliverable%20Memo%20Clean%20Version.pdf>.

⁵ <https://www.driveelectricvt.com/incentives#charging>

charging needs, both at home and when on the go, Governor Scott and the Legislature have allocated \$10 million in funding to help reduce the cost of installing charging stations in multiunit residential properties, workplaces, and public attractions.

Vermont is on the fast track to build out both electric vehicle charging stations with policies, investments, and regulatory streamlining, to ensure everyone can charge and refuel when and where they need to. Publicly funding chargers also have to comply with “up time” requirements and have to adhere to higher standards related to accessibility and interoperability. To ensure a successful transition to electric transportation, Governor Scott and the Legislature allocated millions to zero-emission vehicles to help make these vehicles more affordable and convenient for all Vermonters, while building out the infrastructure and charging stations needed to facilitate this transition. Incentives and grants are now or soon to be available for multi-unit dwelling owners and employers to provide access to charging at apartment buildings and workplaces. No changes were made in response to these comments.

Comment-EVSE2: Some commenters are concerned that there is not enough EV charging infrastructure. Some also would like to see more investments in charging infrastructure in designated downtown areas and at workplaces. Also, commenters are concerned about availability of charging if you do not have a garage or if you don’t own your home.

Response-EVSE2: Vermont is building out a network of electric vehicle charging stations with policies, investments, and regulatory streamlining, to ensure everyone can access reliable, convenient, and affordable charging options when at home and around town, and when traveling longer distances. While the investments made to date have resulted in one of the highest numbers of chargers per capita, 114 charging ports per 100,000 people, the State recognizes the network needs to continue expanding.

Governor Scott and the Legislature have allocated \$10 million to support the build out of electrical infrastructure and charging stations in multiunit residential properties, workplaces, and community attractions, including Vermont’s downtowns. Incentive programs that reduce the cost of installing EV charging in these locations will soon be available. This program is building on a \$1 million pilot program to provide residents of multiunit residential properties access to home EV charging. The pilot program funds have been fully obligated and are expected to result in 84 new Level 2 charging ports at 37 different affordable multiunit residential properties across the state, providing access to home charging for over 6,000 Vermont households.

To support the buildout of fast charging that meets EV drivers need to re-charge more quickly when traveling longer distances, the State has set a goal to have a direct current fast charger (DCFC) within 1 mile of every interstate exit, and within 25 miles of the next DCFC on the State highway network. In support of achieving this goal, Governor Scott and the Legislature have allocated \$2 million in fiscal year (FY) 2023. The State will also receive \$21.2 million over the next 5 years from the Federal Highway Administration. This network of public DCFC chargers can provide 30-90 miles of range per 10 minutes of charging. No changes were made in response to these comments.

Comment-EVSE3: Some commenters are in favor of EVs being standardized to only use one type of charging cable.

Response-EVSE3: ANR agrees that standardized charging cables provide certainty and convenience to consumers and will continue to work with other jurisdictions and stakeholders to promote more standardization related to EV charging. With the new Advanced Clean Cars II proposal, starting with model year 2026, electric vehicles will be required to come with a convenience cord that can charge at both Level 1 and 2 and will reduce the cost for home charging.

Currently, Vermont requires that all publicly funded EV chargers be equipped with both a CHAdeMO and a SAE CCS connector so most cars can access the charging station. No changes were made in response to this comment.

Comment-EVSE4: One commenter noted that the time it takes a business to charge vehicles during a delivery is lost time and money.

Response-EVSE4: The ACT regulation imposes requirements on vehicle manufacturers to produce and sell ZEVs in Vermont. Businesses are not required to purchase electric vehicles under the proposed regulations. Under the ACT regulation new diesel heavy-duty trucks will continue to be available for sale in Vermont before and after 2035 while providing an increased choice for fleets when making decisions about what vehicle will best suit their needs. The ACT regulation includes flexibility for manufacturers to produce and sell new ZEVs into the market segments they deem to be most suitable for the products they manufacture, ensuring that manufacturers develop competitive ZEV products at price points that will meet fleet needs. Used vehicles are outside of the scope of the rules and used ICEVs will continue to be available for sale in Vermont.

Many vehicles, depending on their use and application, will not need to re-fuel during the day. For example, delivery vans are an application considered to be well-suited for electrification because they tend to serve predictable routes, generally travel less than 100 miles per day roundtrip, and return to a centralized fleet depot, which enables fleet operators to strategically deploy vehicles and manage vehicle charging operations. Today, there are more than 20 electric cargo and/or step delivery vans on the market with estimated ranges from 105-210 miles.

ANR anticipates that businesses will determine when and where regular dwell times occur so that drivers and staff are not "on the clock" when trucks or other delivery vehicles are charging. This planning could potentially result in saved time and money, as well as safer driving conditions with reduced risk to drivers. No changes were made in response to this comment.

Comment-EVSE5: One commenter noted that if the expansion and availability of charging is not keeping pace with the increase in EVs then the requirement to deliver 100% light-duty EVs by 2035 under Advanced Clean Cars II should be adjusted. There should be an independent study on a continuing basis to be sure, not just that highways and large workplaces are charger ready, but the side streets of Burlington for the low wage worker in a basement apartment or the trailer on a rural road.

Response-EVSE5: Vermont participates in a number of multi-state workgroups on air quality and climate change issues and will continue to work closely with California and the other Section 177 States on reducing motor vehicle emissions standards. The opportunity for revisions to the adopted rule will occur

during periodic reviews to evaluate rule applicability and feasibility. Vermont will participate in those review opportunities, and availability of charging will likely be a consideration. No changes were made in response to this comment.

Electric Grid Impacts

Comment-EG1: Some commenters are concerned that Vermont’s power grid cannot handle the additional demand for electricity that EVs will require. One commenter stated that the proposed rules should not be adopted until the Vermont Comprehensive Energy Plan and the Vermont Electric Power Company (VELCO) Long-Range Transmission Plan demonstrate that the electrical infrastructure in Vermont will be adequate to handle the electrical vehicles being added to the system.

Response-EG1: Significant load planning takes place at the regional, state, and utility level, with updated forecasts and analyses completed every 1-3 years. These planning efforts use market data, technology adoption curves, and third-party input to understand the future mix of load and generation resources impacting the electric grid. Each plan informs equipment and infrastructure upgrades that are implemented to ensure the grid operates in a reliable and cost-effective manner.

ISO New England, the independent regional grid operator, prepares an annual long-term forecast for electricity demand in each state, including demand for EV charging. The 10-year projections are published in its annual Capacity, Energy, Loads, and Transmission (CELT) Report, and are used in power system planning and reliability studies. ISO New England’s Regional System Plan, last updated in 2021, summarizes system needs for generation resources and transmission facilities. Sufficient resources are expected through 2030 (the time horizon of the plan). The plan anticipates new resource development (namely on- and off-shore wind, solar, and battery resources) and identifies transmission system investments needed to improve reliability and reduce congestion. The report accounts for state policy initiatives and increasing electrification of heating and transportation loads.

VELCO, Vermont’s transmission system operator, works with the Vermont System Planning Committee to forecast changes in electric load and model the ability of Vermont’s grid to accommodate electric demand under various scenarios. The results are published in the Long-Range Transmission Plan (LRTP) updated every three years; the most recent LRTP was published on July 1, 2021, and looks out 20 years. The plan concluded that Vermont’s transmission system has sufficient capacity for expected demand through 2030, and that—by managing 75% of EV load to reduce charging during peak periods—significant transmission upgrades would not be needed. This is also true through 2040, even when considering a higher-than-expected rate of electrification of the transportation and heating sectors. Three distribution utilities already offer EV load management programs, and all utilities will be required to offer rates for EV management by June 30, 2024 (per Act 55 of 2021). The Department of Public Service estimates that 31% of residential EV charging is currently managed and this percentage is consistently growing.

In addition, each electric distribution utility completes an Integrated Resource Plan to meet the need for electricity in a safe, reliable manner with the lowest possible economic and environmental costs. These plans are also updated every three years and account for recent and projected trends in electric loads and economic activity. Distribution utilities monitor equipment capabilities as load grows and anticipate

which substations and circuits will require upgrades. Infrastructure investments do incur costs, but load growth moderates rate impacts by spreading expenses across additional electricity sales. EV charging is typically a flexible load that can be scheduled when the grid is less stressed and wholesale electricity costs are below average. Although early in development, some Vermont distribution utilities have begun testing vehicle-to-grid energy storage services that may further reduce ratepayer costs and improve system reliability.

The LRTP also found that many distribution substation transformers may not require upgrades to accommodate electrification load growth. Comprehensive analysis by the distribution utilities of all circuits to determine their load hosting capacity has not yet been conducted, but it is believed that many existing roadside power lines will be sufficient. The capacity and availability pole-top service transformers is a key consideration. Upgrades of these transformers may be necessary for some households that wish to connect electric vehicles, and global supply chain issues currently cause delays in obtaining them. However, protocols are in place and in development to address this issue.

While electricity demand and transmission are outside the scope of this regulation, ANR did consider these impacts and consulted with the Department of Public Service in developing the proposed rule. These impacts are within the jurisdiction and purview of the Department of Public Service. No changes were made in response to this comment.

Comment-EG2: Some commenters are concerned that Vermont's power grid is not reliable enough to be used to reliably fuel our vehicle fleet.

Response-EG2: Response EG-1 addresses generation, transmission, and distribution system adequacy in relation to serving EV loads. In terms of service interruptions, the Public Utility Commission regulates electric service quality including reliability and outages. According to the U.S. Energy Information Administration's reliability metrics, during 2020, on average, Vermont customers incurred 1.9 outages lasting 2 hours and 15 minutes each, equating to a total outage time of 4 hours and 16 minutes (known as the System Average Interruption Duration Index, or SAIDI).

This value varies by location and is susceptible to variation based on major weather events (such as wind or ice storms) that occur on a less-than-annual basis but cause significant damage. During 2017, a year which included major windstorms in May and in October, customers of the two largest utilities (Green Mountain Power and Vermont Electric Coop) experienced an average total outage time of 14 hours and 23 minutes across 2.5 outages over the course of the year.

It should be noted that, when a power outage occurs, gas stations in the affected area are typically unable to serve consumer demand for gasoline as electricity is used to pump gasoline from on-site storage tanks into the customer's vehicle. With adequate weather forecasting, storm preparation, and communications, such as is conducted by the distribution utilities, it should be possible for EV owners to ensure that their vehicles are fully charged prior to a significant weather event. While grid reliability is outside the scope of this regulation, ANR did consider these impacts and consulted with the Department of Public Service in developing the proposed rule. No changes were made in response to this comment.

Batteries – Recycling and Environmental Impacts

Comment-B1: Many commenters are concerned about the materials used in electric vehicle batteries and how used batteries will be handled at the end of their life. Some commenters are also concerned about the energy needs, environmental harms, and human rights issues associated with mining battery materials, and availability of those materials. Some commenters are supportive of automakers that have already developed battery technology to transition away from materials that are of concern, and others noted that battery research and development should focus on using other alternatives and end-of-life considerations such as recycling and reuse of materials.

Response-B1: The proposed Advanced Clean Cars II regulation includes durability requirements for batteries that lead to reduced battery degradation and therefore less battery replacements. This has a benefit of reducing battery manufacturing impacts of facility emissions and sourcing of raw minerals, as well as slowing down the need for battery recycling and reuse activities.

Regarding the energy needs and environmental impacts of producing an EV battery, and how that compares to emissions and impact from a fossil fuel vehicle, ANR conducted a life-cycle analysis that shows that the life-cycle emissions of an EV is lower than an ICEV. See the discussion of life-cycle emissions in *Supplemental Information for Vermont’s Low Emission Vehicle and Zero Emission Vehicle Proposed Rules* on Page 28.

Electrification of the on-road vehicle fleet will likely result in increased demand for lithium, among other semiprecious metals, such that global supply may not be capable of meeting this demand. There are also likely potential adverse environmental effects from increased mining activity of lithium and other semiprecious metals. Vermont cannot, without speculating, predict the location of these impacts or account for the regulatory environment that may be capable of reducing impacts from these activities. For instance, mining activities that occur overseas in countries that may have fewer regulations in place to mitigate environmental impacts are beyond Vermont’s authority to mitigate or regulate. Nevertheless, these potential impacts are identified and discussed here.

The Agency recognizes that its rules and regulations related to the use of zero-emission technology may induce new demand for various metals including lithium, graphite, cobalt, nickel, copper, manganese, chromium, zinc, and aluminum; however, Vermont’s rules are not solely responsible for an increase in demand for these metals. The federal government recently enacted legislation providing significant support for ZEVs. The Inflation Reduction Act of 2022 provides significant tax credits for new and used ZEVs and electric vehicle charging infrastructure. It provides an advanced manufacturing tax credit for production of critical minerals used in ZEV batteries, appropriates \$500 million for “enhanced use” under the Defense Production Act to incentivize critical mineral production. It authorizes the Department of Energy to commit up to an additional \$40 billion in loan guarantees (on top of an existing program of \$24 billion) for innovative technologies - which includes projects that avoid GHGs and other air pollutants or that employ new or improved technologies. Various international efforts are also underway to electrify the mobile-source sector pursuant to commitments made in the European Union, United Nations (UN) Paris Accord, Kyoto Protocol, and by members of the Under2 Coalition, among others. It is also important to note that ICEVs require aluminum alloys, magnesium, iron, and steel, which are all metals that already require extensive mining with similar physical impacts to the

environment, including loss of habitat, agricultural resources, and forests; water, air, and noise pollution; and erosion.

Retired battery systems can be used in several ways based on their physical characteristics, state of health, and performance, or they will be recycled or disposed if no longer useable. Some battery modules removed from vehicles can be refurbished and reused directly as a replacement battery pack for the same model vehicle. Battery recycling is improving and will continue to improve overtime. New industries are developing ways to recover the most valuable materials from batteries with the intention of reuse. They are also looking at a closed-loop battery production process in which batteries are recycled, remanufactured and returned to the same factory.

Also, the proposed Advanced Clean Cars II regulation would require manufacturers of ZEVs, plug-in hybrid-electric vehicles, and hybrid-electric vehicles to include a label on the vehicle battery that provides key information about the battery system. This will ensure that used batteries can be sustainably and properly managed at their end of life and critical battery materials are efficiently recovered. All of this will help reduce the need for additional mining to supply critical energy materials for ZEV batteries in the amounts needed to displace internal combustion vehicles.

In some cases, after use in a vehicle, lithium battery packs could deliver additional years of service in a stationary application. Examples include backup power for homes or cellular towers as well as for large buildings like sports arenas or electric utility grids. Second-life batteries reduce the demand for newly mined materials used in the production of new energy storage batteries. No changes were made in response to this comment.

Comment-B2: One commenter has concerns about EVs being safe, and specifically references EV battery fires.

Response-B2: Electric vehicles meet the same safety standards as ICEVs. In fact, a gasoline car is more likely to catch on fire than an electric vehicle. A recent study found that fully electric vehicles, were deemed far safer than both hybrids and gas cars; they are far less likely to catch fire, with just 25.1 fires per 100,000 sales. That's compared to 3,474 hybrid fires and 1,529 internal combustion engine fires per 100,000 sales respectively. No changes were made in response to this comment.

Environmental Justice

Comment-EJ1: ANR should immediately begin developing and implementing programs that will be eligible for Environmental Justice (EJ) credits under the ACC II Rule. The Agency should also continue to develop and fund complementary policies and programs. ANR should commit to immediately beginning work and engagement with community members and environmental justice organizations to develop and implement EJ programs that will be eligible for these programs.

Response-EJ1: ANR plans to begin developing criteria for the review and approval of Clean Mobility Programs that will be eligible for EJ credits post-rule adoption.

Comment-EJ2: Some commenters think that the proposed Environmental Justice Credit provisions of the rule would commodify low-income communities while increasing the financial and environmental burdens of those communities. One commenter thinks that Environmental Justice Credits should be allowed but should be valued in a way that makes up for the shortfalls in emission reduction that will occur due to fewer vehicles being delivered.

Response-EJ2: ANR's approach to environmental justice in this proposal is multi-faceted. The significant pollution reductions from the proposal as a whole will reduce exposure to vehicle pollution in communities throughout Vermont, including in low-income and disadvantaged communities that are often disproportionately exposed to vehicular pollution. ZEVs can also be cheaper to own and maintain, reducing transportation costs that comprise a disproportionate share of the spending for lower-income Vermonters. Further, the ZEV assurance measures, such as minimum warranty and durability standards, will ensure these emissions benefits are realized and long-lasting, while supporting more reliable ZEVs in the used vehicle market. Durable and better performing used ZEVs can help increase access to clean vehicle technologies for communities that may not be buying new vehicles, but which do need reliable mobility options. Vermont's many incentive programs, though beyond the scope of this proposal, also further enhance ZEV access. As part of this overall portfolio approach to equity measures, the proposed rule also includes regulatory flexibilities that will further enhance ZEV access. Optional Environmental Justice Credits may be awarded to manufacturers under the ZEV regulation who help increase affordable access to ZEVs for disadvantaged communities as part of the portfolio of equity approaches described above.

The Environmental Justice Credits would be a distinct category under the ZEV regulation where vehicle values earned can be banked, traded, and used in the 2026 through 2031 model years, further speeding affordable ZEV access in these communities during the critical early years of the program. The proposal includes a 5% cap on EJ Credits that could be used in any given year to fulfill a manufacturer's annual ZEV requirement under the regulation. After the 2031 model year these optional EJ Credits would expire. The EJ Credits are aimed at providing manufacturers additional vehicle values for voluntary actions that would help achieve more equitable outcomes and that would increase access and exposure to ZEV technologies for underserved communities.

Under the proposal, EJ Credits can be earned in two ways: 1) Allowance for ZEVs and PHEVs remaining in Vermont after leasing term. A 2026 through 2028 model-year ZEV or PHEV could earn an additional 0.25 or 0.20 vehicle value, respectively, after the vehicle is registered for operation on public roads in Vermont beyond its first qualifying lease term and placed with a household located in a disadvantaged community. 2) Discounted ZEVs and PHEVs placed in a community-based Clean Mobility Program. 2026 through 2031 model-year ZEVs and 6-passenger (or more) PHEVs that are sold at a minimum discount of 25% off of the manufacturer's suggested retail price to a community-based Clean Mobility Program could earn an additional 0.50 and 0.40 vehicle ZEV credit value, respectively. Eligible Clean Mobility Programs will be determined eligible via a set of criteria developed by ANR in coordination with VTrans and other community stakeholders after the rule is adopted. Existing programs may be eligible if they meet the qualifying criteria.

Environmental justice and equity have been taken into consideration for the deployment of medium- and heavy-duty electric vehicles as well. Earlier in 2022, seventeen U.S. states, the District of Columbia, and the Canadian province of Quebec worked together through the Multi-State ZEV Task Force, a coalition facilitated by the Northeast States for Coordinated Air Use Management, to produce a bold *Action Plan* for accelerating a transition to zero-emission trucks and buses⁶. To inform the development of the *Action Plan*, the ZEV Task Force directly engaged many public and private sector experts, partners, and stakeholders—including equity and environmental justice organizations, truck and bus manufacturers, industry and technology experts, charging and fueling providers, utility companies, public and private fleet representatives, commercial financing experts, and environmental advocates. The ZEV Task Force also received public comments on the draft *Action Plan*. Vermont intends to adopt its own Action Plan stemming from the multi-state plan, which will undergo its own stakeholder engagement process and will be informed by the equity and environmental justice considerations incorporated into the multi-state plan. No changes were made in response to these comments.

Comment-EJ3: As there are only limited EJ provisions in the ACC II regulation, Vermont—as part of its engagement with community members and environmental justice organizations—must continue to develop and fund complementary policies and programs that will ensure the benefits of a transition to zero-emission vehicles are realized by all Vermonters, especially those who have been historically overburdened with transportation pollution, by building on the work done to stand up initiatives like MileageSmart, Replace Your Ride, and the multi-unit dwelling EVSE grant program.

Response-EJ3: This past year, the legislature has continued to build upon the State's cleaner transportation incentive programs with its highest levels of investment ever--\$12 million for the Incentive Program for New EVs, \$3 million for MileageSmart, \$3 million for Replace Your Ride, \$55,000 for the eBike Incentive Program and another \$10 million for community charging and to extend the pilot program for charging at affordable Multiunit Dwellings. (Act 185: Bill Status H.740 (Act 185) (vermont.gov)) All income-sensitized, the programs have provided even greater benefits to households with lower incomes and now have funding to extend well beyond previous one-time appropriations. The existence and performance of such targeted programs in Vermont helps ensure that all Vermonters will benefit from these proposed rules.

VTrans is currently working on two analyses to help enhance transportation and incentive programming to better serve low-income residents. The *Transportation Equity Framework* recognizes that equitable transportation investments have not always been prioritized, resulting in disparities in transportation access from community to community, and will guide VTrans in how investments and services are carried out throughout the state. Also, VTrans is working with its contractor implementing the vehicle purchase incentive programs to optimize these programs to meet both climate and equity goals. No changes were made in response to this comment.

⁶ <https://www.nescaum.org/documents/multi-state-medium-and-heavy-duty-zero-emission-vehicle-action-plan/>

Comment-EJ4: These rules will give higher-income Vermonters access to EVs and a cleaner environment while the positive economic, health and environmental impacts will not be felt by lower-income Vermonters and communities for many years, if ever.

Response-EJ4: See responses to other environmental justice comments, above. The provisions of the proposed rule are designed to benefit all Vermonters, by improving air quality in areas disproportionately impacted by harmful motor vehicle emissions, and with a specific focus on making EVs more accessible to lower income communities. Facilitating a robust used EV market sooner and incentivizing automakers to deliver affordable EVs will make this technology accessible and improve air quality. Enhanced durability and warranty requirements and state and federal incentives also better serve and prioritize lower income motorists. No changes were made in response to this comment.

Workforce Development

Comment-WF1: Some commenters support electric vehicle adoption as a way to attract and train a new generation of auto technicians to Vermont to support operation and maintenance of EVs. Commenters also want Vermont to invest in the next generation of auto technicians and support them through the transition.

Response-WF1: ANR agrees that training and equipping automotive technicians to be ready and able to service electric vehicles is a component of the broader economic opportunity that accompanies the adoption of initiatives and technologies to reduce air pollution and greenhouse gas emissions. Preparing and training the Vermont workforce for this transition is a critical component of ensuring that EVs are properly maintained and cost-effective for consumers. Some federal funding via the Inflation Reduction Act may be available to help directly support this type of workforce training in the future. Additionally, VTTrans is using funds to implement a study that identifies workforce development needs related to EV charger installation and maintenance, as well as EV repairs. ANR also supports the automotive workforce through free trainings related to the diagnose and repair of motor vehicle emissions technology, and this training could be expanded upon to also focus on electric vehicle and hybrid technologies. No changes were made in response to this comment.

Comment-WF2: Some commenters expressed concerns about workforce impacts to the vehicle repair industry relating to independent repair shops' ability to access EV repair information and tools.

Response-WF2: ANR agrees that to determine a vehicle's need for repair and conduct subsequent needed repairs properly, automotive repair technicians need to be able to access vehicle data, diagnostic tools, and manufacturer developed diagnostic and repair information. Following the earlier adoption of service information requirements by California, Massachusetts and the U.S. EPA, auto manufacturers have voluntarily provided access to all repair information nationwide over the past decade. However, these earlier California and the U.S. EPA service information requirements have not pertained to ZEVs and now in this proposed ACCII regulation, CARB is requiring the access and disclosure of repair information and tooling for ZEVs. More specifically, for ZEVs, the scope of the required information is for all propulsion-related parts to ensure that, at a minimum, a vehicle can be repaired to make such that it can continue to be operated as a ZEV. Manufacturers must provide repair information and make available the necessary tooling to non-dealer repair shops. This requirement ensures that

independent technicians have access to basic information needed to help diagnose and repair vehicles, which further supports consumer confidence in purchasing new and used ZEVs. Therefore, ANR is modifying the proposed rule to include CCR, title 13, section 1969, Motor Vehicle Service Information - 1994 and Subsequent Model Passenger Cars, Light-Duty Trucks, and Medium-Duty Engines and Vehicles, and 2007 and Subsequent Model Heavy-Duty Engines in the incorporation by reference table in §40-201 of the proposed rule.

Economic Impacts

Comment-E1: Some commenters are concerned about how Vermont will fund the maintenance of its roads and bridges if less motorists are paying the fuel tax because of the broader use and adoption of electric vehicle technology and fewer vehicles paying fuel tax.

Response-E1: In 2021, VTrans studied the possibilities for implementing a road usage charge for light-duty EVs in recognition of this issue. Like all states, Vermont is currently losing fuel tax revenue due to the increasing efficiency of all vehicles, but this will grow exponentially as the transportation sector electrifies. The 2021 study recommended that Vermont investigate further the feasibility and cost-effectiveness of implementing a mileage-based user fee for light-duty PEVs through the State's existing vehicle inspection system. Work has begun on this second assessment phase in full preparation for higher EV adoption and associated revenue losses. The results of that study are documented in the final report: Final Report of VT RUC vfinal (vermont.gov). While funding for road maintenance is outside the scope of this regulation, ANR did consider these impacts and consulted with the VTrans in developing the proposed rule. No changes were made in response to this comment.

Comment-E2: ANR's economic impact statements regarding the direct and indirect impacts of the proposed rule are inadequate. Stakeholders should have an opportunity to evaluate the data, costs, and assumptions underlying such its analysis before ANR finalizes its proposed rulemaking.

Response-E2: As a general matter, ANR's economic analysis is based on data, modeling, and assumptions sourced and developed with internal and outside expertise. Pursuant to the Vermont Administrative Procedure Act, ANR is required to disclose to the public the economic impact of the proposed rules, as well as scientific information and materials incorporated by reference in the proposed rules. ANR included the discussion and analysis required in the APA in the rulemaking forms and additional technical supporting documents that accompany the proposed rule. The data, costs, and assumptions are all included or cited in the above-mentioned documentation and has been available for public review since August 12, 2022. No changes were made in response to this comment.

Comment-E3: One commenter is concerned with the cost that will be incurred by our generation if we do not take steps today to mitigate climate change.

Response-E3: Such costs were considered as part of ANR's economic impact analysis of this rule. The estimated reduction of GHG emissions resulting from the adoption of these regulations will benefit Vermont residents monetarily by reducing the future social costs of carbon emissions. The social cost of carbon (SC-CO2) is an estimate of the monetized value of long-term impacts (economic, health and environmental) from climate change. Adoption of ACCII provides an estimated cost savings of more

than \$1.1 billion by 2040, while adoption of the medium – and heavy-duty truck regulations provide an estimated cost savings of more than \$600 million by 2050. A more detailed discussion is included in the *Supplemental Information for Vermont’s Low Emission Vehicle and Zero Emission Vehicle Proposed Rules*.

Additionally, the proposed rule will reduce NOx and fine particulate matter (PM2.5) emissions, which will result in health benefits for Vermonters, including reduced instances of premature deaths, hospitalizations for cardiovascular and respiratory illnesses, and emergency room visits. The estimated total health cost savings from due to a reduction in criteria pollutant emissions resulting from the proposed ACCII regulation for the year 2040 in Vermont ranges from \$373,000 to \$840,000. The estimated total health cost savings from due to a reduction in criteria pollutant emissions resulting from the proposed medium – and heavy-duty truck regulations ranges from \$11 million to \$24 million by 2050. A more detailed discussion is included in the *Supplemental Information for Vermont’s Low Emission Vehicle and Zero Emission Vehicle Proposed Rules*. No changes were made in response to this comment.

Legal and Procedural

Comment-LP1: Some commenters note that the rule process should be more transparent, the rule text and associated public events should be made available in languages other than English, and the public should be made more aware of the impacts of the rule. Another commenter stated that the rule process did not allow for public input because the rule must be “identical” to California standards.

Response-LP1: ANR is committed to providing all Vermonters meaningful and equitable access to its programs, services, and activities. The public engagement process for this rulemaking was conducted consistent with the Vermont Administrative Procedure Act, the Global Warming Solutions Act, ANR’s Interim Limited English Proficiency Plan, and the latest proposed Language Access Plan which describes how the agency provides language access services. ANR’s public engagement process for this rulemaking also incorporated feedback collected during several meetings of the Vermont Climate Council Transportation Task Group, Just Transition Subcommittee, and the Interagency Committee on Administrative Rules (ICAR). Throughout the process, ANR’s website included the schedule for public events, information about the proposed rules and supplemental materials, and notice of the availability of language access services. The RSVP page for the public meetings also included public notice of language access services. ANR did not provide the rule text in languages other than English because ANR did not receive requests for language translation. After filing the proposed rule, ANR hosted more public meetings than required by law, including five in-person meetings around Vermont, one virtual public hearing, and one virtual stakeholder meeting for businesses and fleet owners impacted by the medium- and heavy-duty rules. While the Clean Air Act requires the rules to be “identical” to California, there are aspects of Vermont’s proposed rules that can and have been changed based on public comment, for example see Response-WF2 and Response G-13. No changes were made in response to these comments.

Comment-LP2: Some commenters stated that ANR does not have legal authority to adopt the rules.

Response-LP2: ANR has legal authority to adopt the rules pursuant to the Vermont Air Pollution Control Law, 10 V.S.A. §§ 554, 558, 567; the federal Clean Air Act, 42 U.S.C. § 7507, and the Global Warming

Solutions Act, 10 V.S.A . § 593(b). The Vermont Air Pollution Control Law allows the ANR Secretary to set emission control requirements on sources of air contaminants in Vermont and specifically to control such emissions from motor vehicles through the prescription of requirements for the use of equipment that will reduce or eliminate emissions. Vermont law also allows the use of vehicle registration and inspection as an enforcement mechanism for these rules. *See* 23 V.S.A. Ch. 7, 10 V.S.A. §567. The federal Clean Air Act allows states to adopt and enforce any model year standards relating to control of emissions from new motor vehicles and engines, so long as such standards are identical to California’s standards, are adopted at least two years before commencement of the model year, and the adopting jurisdiction has a plan approved pursuant to Part D of the Act. States may adopt these rules prior to EPA granting a waiver to California under Clean Air Act Section 209(b). Once EPA has granted a waiver to California, Section 177 states may enforce standards to control motor vehicle emissions using certification, inspection, registration, or some other approval process. The Global Warming Solutions Act requires ANR to adopt these rules by December 1, 2022 because the rules were included in the Climate Action Plan adopted by the Vermont Climate Council in December 2021. No changes were made in response to these comments.

Other changes to the rule text

Section 40-102(b), Incorporation by Reference, of the proposed rule was changed to clarify the scope of applicability of the rules as it relates to auto manufacturers that produce different volume of motor vehicles. The term “low volume” was added to the list of manufacturer types to ensure consistency with the definitions used in the Advanced Clean Trucks rule.

No other changes were made to the proposed rule text.

**VERMONT LOW EMISSION AND
ZERO EMISSION VEHICLE
PROPOSED RULES**

**WRITTEN COMMENTS
RECEIVED**

From: [Robb Kidd](#)
To: [ANR - DEC Lev Zev](#)
Cc: [O'Toole, Megan](#); [Moore, Julie](#)
Subject: ACC II/ACT Support Letter From Climate Community Leaders and Advocates
Date: Friday, September 30, 2022 2:37:05 PM
Attachments: [ACC II ACT Support Letter From Climate Community Leaders and Advocates.pdf](#)
[Support letter for ACC II ACT from Citizens and Advocates.pdf](#)

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

Dear Secretary Julie Moore,

Please accept the attached letter signed by over 30 community leaders and climate advocates in support of the Advanced Clean Cars II and Advanced Clean Truck Rules.

We also are resubmitting the letter submitted in August to the Interagency Committee on Administrative Rules to be included in the rule-making record. It is my understanding that the letter will not automatically be included in the official record, however as it was signed by over 80 advocates and community leaders we request it be included.

Over the last few weeks, we have encouraged our partners and community leaders to attend public hearings and submit public comments. However, as many of these leaders and organizations are busy with multiple priorities not everyone could attend or submit comments, so please count these individuals and organizations as supporting the rule adoptions.

We appreciate the considerations of the Agency of Natural Resources in adopting these important rules to transform Vermont's transportation to one that is cleaner and emits less pollution.

Sincerely,

Robb Kidd

--

Sierra Club
Vermont Conservation Program Manager
(802)505-1540
(He, Him, His)

Agency of Natural Resources Central Office
1 National Life Drive
Davis 2
Montpelier VT 05620-3901

September 30, 2022

Subject: Advanced Clean Trucks (ACT), Advanced Clean Cars (ACC) II, Low NOx Heavy-Duty Omnibus, and the Phase II Greenhouse Gas Emissions Standard rulemaking.

Dear Secretary Julie Moore,

On behalf of the undersigned businesses, health professionals, organizations, and individuals that represent tens of thousands of Vermonters, we are writing to express our strong support for the Advanced Clean Trucks (ACT), Advanced Clean Cars (ACC) II, Low NOx Heavy-Duty Omnibus, and the Phase II Greenhouse Gas Emissions Standards rules (the "Rules"). We urge that the State adopt these Rules by the end of 2022 so that increasing numbers of zero-emission vehicles will be available to Vermonters as soon as possible.

Transportation is the largest source of emissions in Vermont. The Vermont Agency of Natural Resources' approval of a robust set of vehicle regulations will set the state on track to achieve 100% new EV sales by 2035, while also greatly reducing pollutants from medium and heavy-duty vehicles. If the Vermont Agency of Natural Resources adopts a strong version of these rules, it will help transition Vermont to a future that prioritizes clean air for all while reducing dangerous and unhealthy particulate matter in environmental justice focus populations that currently bear a disproportionate share of the burden of transportation-related air pollution.

The rules will move Vermont forward:

1. The Advanced Clean Cars (ACC) II rule will set a gradually increasing sales requirement for automakers to sell a certain percentage of electric vehicles each year. If the rule is adopted this year, this requirement would start at 35 percent in 2026, and eventually reach 100% of new electric vehicle sales by 2035.
2. The ACC II rule will encourage the delivery of more affordable vehicle options while simultaneously increasing vehicle options for Vermonters.
3. The Advanced Clean Trucks (ACT) and the Heavy Duty Omnibus rules will reduce Nitrogen Oxide (NOx), a precursor to smog which can cause or exacerbate numerous respiratory and other health ailments that can contribute to disease and premature death in children and adults. This rule will require automakers to sell an increasing percentage of electric trucks and buses each year, eventually reaching 40 - 75% by 2035, and will require that NOx pollution be decreased 90 percent by 2027 compared to current standards.
4. ACT will also assist Vermont fleets in transitioning to cleaner and more affordable vehicle options. Electric vehicles have lower lifecycle costs as an EV requires less maintenance and their use of relatively inexpensive, stably-priced electricity instead of expensive,

volatile-priced fossil fuels. Businesses can amortize the initial purchase price over the lifecycle of the vehicle and therefore save money over the lifetime.

Vermont must adopt a strong version of these rules to protect the health of Vermont residents, including those in environmental justice communities, as well as our climate for generations to come. Vermont must adopt these rules while simultaneously enacting complementary policies to finance low- and moderate-income incentives, expanding charging infrastructure, advancing transit options, making Vermont safe for bikes and pedestrians, and increasing the support of local renewable energy generation. We kindly request that the Agency of Natural Resources finalizes these rules by December 1, 2022, as identified in the Climate Action Plan and required by the Global Warming Solutions Act.

Signed

Robb Kidd, Conservation Program Manager, Vermont Sierra Club
Ben Edgerly Walsh, Climate & Energy Program Director, Vermont Public Interest Research Group
Capstone Community Action Barre
Christopher Miller, Ben & Jerry's Homemade, Inc, Head of Global Activism Strategy South Burlington, VT
Dan Fingas, Rights And Democracy, Movement Politics Director Plainfield
Dan Fingas, Vermont Movement Politics Director, Rights and Democracy
David K. Mears, Audubon Vermont Executive Director Huntington
Elena Mihaly, Vice President and Director, Conservation Law Foundation Vermont
Francine Pomerantz Richmond
Hallie Picard, The Alchemist, HR Manage Stowe, VT
Jack Hanson (Executive Director of Run On Climate and Former Burlington City Councilor) Burlington
Jeff Forward, Principal, Forward Thinking Consultants, LLC Richmond
Jenny Bower, University of Vermont, Graduate Student
Johanna Miller, Energy and Climate Program Director/VECAN Coordinator
Jordan Giaconia, Public Policy Manager, Vermont Businesses for Social Responsibility
Kelly McCracken, LICSW Montpelier
Kristopher Keeton South Burlington
Lake Champlain Committee Lori Fisher, Executive Director Burlington
Laura Bailey Fayston
Lauren Hierl, Executive Director, Vermont Conservation Voters
Matthew Lawrence LeFluer. Green Mountain Self-advocates Alburgh
Michael Yantachka Charlotte
Patrick Flood Woodbury

Paul Bierman, Professor of Environmental Science Burlington
Peter Sterling, Executive Director, Renewable Energy Vermont
Rep. Jim McCullough Williston
Rep. Leslie Goldman Rockingham
Representative Becca White Hartford
ReSOURCE A Nonprofit Community Enterprise Inc Williston
Richard Butz, Vermont Interfaith Power and Light Bristol
Richmond Climate Action Committee Richmond
Robb Kidd, Conservation Program Manager, Vermont Sierra Club
Ron McGarvey, President, Vermont Interfaith Power & Light
Sam Carlson, Managing Member, Mont Vert LLC (renewable energy investments) South
Burlington
Sam Swanson South Burlington
Seventh Generation, Inc Burlington
Sophia Donforth, Vermont Energy Education Program, Executive Director
SunCommon Waterbury
Vermont Climate and Health Alliance Burlington
Virginia Clarke -- Richmond

Agency of Natural Resources Central Office
1 National Life Drive
Davis 2
Montpelier VT 05620-3901

August 3, 2022

Subject: Advanced Clean Trucks (ACT), Advanced Clean Cars (ACC) II, Low NOx Heavy-Duty Omnibus, and the Phase II Greenhouse Gas Emissions Standard rulemaking delay.

Dear Secretary Julie Moore and Interagency Committee on Administrative Rules Members,

On behalf of the undersigned businesses, health professionals, organizations, and individuals that represent thousands of Vermonters, we are writing to express our strong support for the Advanced Clean Trucks (ACT), Advanced Clean Cars (ACC) II, Low NOx Heavy-Duty Omnibus, and the Phase II Greenhouse Gas Emissions Standards rules (the "Rules"). We urge that the State adopt these Rules by the end of 2022 so that increasing numbers of zero-emission vehicles will be available to Vermonters as soon as possible.

As you know, transportation pollution is the largest source of climate-disrupting and toxic air pollution in Vermont. The transportation sector accounts for 39.1% of Vermont's greenhouse gas emissions. Fossil fuel-powered cars, trucks, and buses account for the majority of these emissions. With the recent setbacks in implementing the Transportation Climate Initiative Program in the Northeast, and the lack of any other clear policy or regulatory tools to achieve certain, significant pollution reductions in the transportation sector, adopting the Rules in a timely fashion is even more critical to meeting Vermont's required emission reductions. Emissions disproportionately impact low-income populations and communities of color. Some of those impacts include higher rates of asthma, bronchitis, cancers, and premature deaths. Furthermore, Vermonters are disproportionately burdened with volatile gasoline pricing because Vermonters are more dependent on personal vehicles than many other Americans.

The ACT rule will require that all new sales of medium and heavy-duty vehicles (MHDVs) – transit and school buses, freight, utility, delivery, and fleet vehicles with a Gross Vehicle Weight Rating (their fully-loaded weight) of more than 8,500 pounds be 40 - 75% zero-emission by 2035, and the ACC II rule will require that all sales of new passenger vehicles be 100% zero-emission by 2035. These requirements will help ensure that Vermonters have less air pollution and more zero-emissions vehicles available to them while also helping Vermont achieve its climate requirements under the Global Warming Solutions Act, including net-zero emissions by 2050. The Vermont Climate Council adopted the Vermont Climate Action Plan, which included the Rules as important policies and strategies for Vermont to reach its net-zero targets.

Adopting the Rules this year will be critical in beginning to accrue all the associated climate, health, and economic benefits of a just transition away from fossil fuels. A study by the International Council on Clean Transportation shows that the ACT, NOx Omnibus and Phase II rules will improve Vermont's air quality by reducing Nitrogen Oxide (NOx) and PM 2.5 by 8,190 and 44 short tons, respectively, and reducing Carbon Dioxide equivalent (CO2e) by 3.70 million metric tons by 2050. Although there are no studies on the impacts of ACC II program in Vermont, in California, the ACC II program is anticipated to

reduce emissions in the passenger vehicle fleet by 57,090 tons of reactive organic gasses, 83,850 tons of oxides of nitrogen, and 5,330 tons of particulate matter (PM2.5) cumulatively by 2040 relative to a baseline without the proposed regulations. California also expects ACC II proposals to reduce cumulative greenhouse gas emissions by an estimated 440 million metric tons of carbon dioxide from 2026 to 2040.

The Clean Air Act requires a two-year lead time for states adopting the Rules before enforcement can officially begin. The first applicable model year for ACT begins in 2024, while the first applicable model year for ACC II begins in 2026. If these Rules are adopted in 2022, Vermont will be able to enforce the requirements for model years 2026 for both of these Rules. Delaying adoption means that Vermont will continue to miss out on the annual requirements and subsequent benefits these Rules provide, and Vermonters will miss out on access to zero-emissions vehicles they would otherwise be able to take advantage of. There is no time left for delay.

As Vermont proceeds with rule implementation we must ensure that auto manufacturers are not given opportunities to evade supplying the required levels of zero-emission vehicles, and that credits for previous sales do not count for the new targets. In some cases, an auto manufacturer may have the ability to invest in other programs designed to reduce transportation emissions if sales targets are not reached. In those circumstances, we urge investments in equity-based programs such as Mileage Smart and Replace Your Ride to be the default, however, those investments must be substantial to make up for the shortfalls in reaching the required carbon emission reductions.

By adopting the Rules, Vermont can simultaneously improve air quality, lower transportation costs, protect our children and communities, address environmental health inequities, and reduce greenhouse gas emissions. Respectfully, we urge you to adopt the ACT, NOx Omnibus, Phase II and ACC II Rules this year, and we appreciate your commitment to ensuring Vermont meets its legal and moral obligation to do its part on the climate crisis. This program will certainly be key to that.

Sincerely,

Robb Kidd, Conservation Program Manager, Vermont Sierra Club
Ben Edgerly Walsh, Climate & Energy Program Director, Vermont Public Interest Research Group
Dan Fingas, Vermont Movement Politics Director, Rights and Democracy
Dan Quinlan, Chair, Vermont Climate Health Alliance
Dave Rapaport, Social Mission Officer, Ben & Jerry's
David Mears, Executive Director, Audubon Vermont
Debra Stoleroff, Steering Committee Chair, Vermont Yankee Decommissioning Alliance
Elena Mihaly, Vice President and Director, Conservation Law Foundation Vermont
Jake Elliott, Impact Partnership Manager, SunCommon
Jeff Forward, Principal, Forward Thinking Consultants, LLC
Johanna Miller, Energy and Climate Program Director/VECAN Coordinator
Jordan Giaconia, Public Policy Manager, Vermont Businesses for Social Responsibility
Julia Scott, CEO, J.Scott Marketing
Kathy Harris, Clean Vehicles and Fuels Advocate, Climate & Clean Energy Program, Natural Resources Defense Council

Kati Gallagher, Coordinator, Transportation for Vermonters
Katie McCurdy, Founder, Pictal Health
Kenneth Allen, President VtPHA
Lauren Hierl, Executive Director, Vermont Conservation Voters
Meghan Ksiazek- Vice President, Turtle Fur
Nancy Rice, Randolph Center, VT, VT Yankee Decommissioning Alliance Treasurer
Patricio Portillo, Senior Advocate, Climate & Clean Energy Program, Natural Resources Defense Council
Paul Lesure, President, Green Mountain Solar
Peggy O'Neill-Vivanco, Coordinator, Vermont Clean Cities Coalition
Peter Sterling, Executive Director, Renewable Energy Vermont
Ron McGarvey, President, Vermont Interfaith Power & Light
Sophia Donforth, Executive Director, Vermont Energy Education Program
Sue Minter, Executive Director, Capstone Community Action
Thomas Longstreth, Executive Director, ReSOURCE A Nonprofit Community Enterprise Inc.
Vanessa Rule, 350VT
Alicia Jacobs, MD, Colchester VT
Allen L Knowles III, MD (retired) Richmond, VT
Andrea Grayson
Bella Bennett, Burlington, PhD Candidate, UVM Rubenstein School for Environment and Natural Resources
Cathy Aikman, Richmond, VT
Christine Weinberger, MD Burlington, VT
Christopher Granda, Richmond, VT
Diane Dubuque, Fairfax, VT
Donald R. McIntyre, MD
Elizabeth Parsons, RN, Burlington, VT
Eva Zaret, Marshfield, VT
Gretchen Elias, Montpelier VT
Hallie Picard
Jack Hanson, Burlington City Councilor
Jennifer Borofsky MD, Fayston VT
Jenny Bower, Burlington, VT
Jenny Evans First, Family Nurse Practitioner, Richmond, VT
Jessica Wikle, Essex Junction, VT
Representative Jim McCullough, VT State Legislator
Judy Fingergut, Burlington, Physician
Julia Cavanagh, Charlotte, resident/constituent
Julie Campoli, Burlington, VT
Justin Goggin, DVM, Jericho VT
Karen Mckenny RN, South Burlington
Kathleen Kesson, Barre VT, Professor Emerita, LIU-Brooklyn ISE
Kelly McCracken, Montpelier, Licensed Clinical Social Worker
Kristopher Lawrence Keeton, South Burlington, DDS
Laural Ruggles, Danville, VT
Representative Leslie Goldman MSN, MPH, FNP

Linda McGinnis, South Burlington, VT, Economist and climate policy expert
Lisa D Sharp Grady, Bradford, VT
Madilyn Sandy, Jericho, VT
Matthew Burke, Research Associate, UVM
Matthew Lawrence LeFluer, Advocate, community volunteer board member, Alburgh, VT
Megan Malgeri, MD
Michael Ruggiero, Winooski, Chemistry Professor at UVM
Natalee Braun, PhD Essex, VT Member 350VT
Paul Bierman, Burlington, Professor of Natural Resources, UVM
Paul Zabriskie, Middlesex, VT
Phil Hammerslough, Burlington, VT
Rebecca Jacobs, Sheldon, VT
Rebecca Jones, MD LLC Brattleboro, VT
Robert Luebbers
Sally Kerschner, Public Health Nurse, Ferrisburgh, VT
Sam Carlson, South Burlington, University of Vermont
Sascha Mayer, Mamava, Burlington
Sebbi Wu, Burlington, VT
Seth H. Frisbie, Ph.D., East Calais, VT, Professor Emeritus of Chemistry
Tyler Merritt, Richmond, VT
Dr. Virginia Clarke, Richmond VT
William April, Waterbury Ctr., VT, Concerned Citizen

cc: Governor Phil Scott, Melissa Mazza-Paquette, House Transportation Chair Diane Lanpher

From: [Daniel Jordan](#)
To: [ANR - Vermont Climate Council](#)
Subject: 2035 proposed ev mandate
Date: Thursday, September 15, 2022 5:08:37 PM

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

If you count hybrids and phev vehicles as ev's in the law, I'm not opposed, per se, but I'm concerned with the reliability and robustness of our power grid and charging infrastructure. I think on emissions following California is not bad. But possibly delaying the implementation until after 2037 May also get more used ev's on the market. I also worry about range when it is very cold. That's why I think hybrids and other fuels will still have a place.

Also- the state should subsidize ev conversion kits of older vehicles through pairing up with manufacturers.

Dan Jordan
Enosburg Falls

From: [Candy Jones](#)
To: [O'Toole, Megan](#)
Subject: Advanced Clean Car and Truck Rules
Date: Wednesday, August 31, 2022 7:40:25 AM

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

Hi Megan,

We know that Vermont's greatest emissions come from transportation and home heating. Here is an opportunity to adjust those numbers. We need more stringent legislation to ensure that our vehicles are transitioned to low emission vehicles.

Thank you,
Candy Jones
Rutland, VT

Sent from my iPad

From: pmorsevt@gmail.com
To: [ANR - DEC Lev Zev](#)
Cc: [Brenda J Bean](#)
Subject: Advanced Clean Car II
Date: Thursday, September 22, 2022 3:34:46 PM

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

I support Vermont adopting the latest update to the California Clean Car Rules.

I support it as a means to improve our environment and to use Vermont energy sources rather than out of state or out of the country sourced fossil fuels.

While there are aspects of the rules that I believe could be improved, I understand that adopting them as California wrote them would send the strongest message.

While I'm writing I'll take the chance to express my opinion on a better EV future. I believe that the best future would include the following aspects:

- A. EV batteries that are manufactured with more commonly available materials rather than rare earth metals, as much as possible.
- B. EV batteries that are inherently safe, recyclable and lower cost.
- C. Many if not most EVs made with a smaller, lighter, less expensive battery (40-60kwh) that can charge quickly (10 minutes rather than 45 minutes) supported by a sufficient number of reliable DCFC stations.
- D. All DCFC standardized on one charge plug.
- E. All EVs available with a heat pump for colder climates.
- F. When a EV manufacturer describes their vehicles as having a battery size of x kWhs then all of that total is able to be drawn down or charged up on every charge cycle without significantly degrading the battery. As an example my EV's manufacturer recommends typically operating the vehicle within 20-80% state of charge. Either derate the battery size (and the mile range marketed) or use a battery chemistry that actually allows daily operation from 100% to 0% to 100%.
- G. Not every EV on sale should be equipped with a myriad of features and huge infotainment screens. Some should be simpler and less expensive.

I understand that State of Vermont regulators don't have the sway to make such things happen, but at least I am able to express my ideas.

Phil Morse
370 Dodge Farm Rd
Barre, VT 05641
802-558-7535

From: [Lisa Pezzulich](#)
To: [O'Toole, Megan](#)
Subject: Advanced Clean Cars II & Advanced Clean Trucks rules
Date: Tuesday, September 6, 2022 9:29:10 AM

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

Hello Megan,

I am writing as a concerned Vermont resident. I would like to see full support of the Advanced Clean Cars II & Advanced Clean Trucks rules coming up.

I think transitioning to all electric vehicles is crucial to combat climate change!

Thank you,

Lisa M. Pezzulich, Psy.D.
157 Cobble Hill Road, Shaftsbury, VT 05262
(lisapezz@gmail.com)
(802) 338-6815

From: [Natalee Braun](#)
To: [O'Toole, Megan](#)
Subject: Advanced Clean Cars II & Advanced Clean Trucks rules
Date: Thursday, September 22, 2022 4:32:29 PM

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

Count me in as a full supporter of the Advanced Clean Cars II & Advanced Clean Trucks rules. We are wildly overdue for transforming our transportation options in Vermont to reflect a strong commitment to addressing the accelerating disaster of climate change. Let's see VT provide the leadership in this area as it has done in so many other arenas.

Yours, Natalee Braun, PhD

From: [Georgia Cosenza](#)
To: [O'Toole, Megan](#)
Subject: Advanced Clean Cars II & Advanced Clean Trucks rules
Date: Friday, September 30, 2022 1:12:38 PM

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

Hello

I am submitting this comment on the Advanced Clean Cars II & Advanced Clean Trucks rules. I am very much in favor of promoting and encouraging clean energy as a whole including electric vehicles. However, the state needs to make sure that the infrastructure to support electric vehicles is in place FIRST. That means abundant, accessible and affordable charging stations. Vermont also needs to make sure that the infrastructure is in place to provide the additional electric needed for zero emissions. I just received an email from my electric utility (VEC) stating that they are experiencing major shortages in equipment and parts needed by them for upgrades and repairs. The state should be addressing these serious issues first. In addition, the state needs to be looking at controlling electricity costs. The cost of electric here in the NEK is far too high when compared to the rest of the state and indeed the nationwide average. If you want to encourage electric vehicles. Then they must be reasonable to run. Finally, the vehicles themselves must be adequate for the conditions in which they are used. Right now I would not hesitate to own an electric vehicle if I lived in a city like Burlington, but here in the NEK with longer distances, bad roads including winter road conditions, I am less interested in an electric vehicle (at this time). While I am confident that the technologies will improve over time, I feel very strongly that the state should be addressing and resolve the issues above before making rules to force the use of electric vehicles. Thank you for your time and attention to this matter.

Georgia Cosenza
7 Four Wheel Drive Rd.
Morgan, VT 05853
Home: (802)723-4240
(Cell: 802) 673-0532
Email: georgiacvt@gmail.com

From: [Jim Wanner](#)
To: [O'Toole, Megan](#)
Subject: Advanced Clean Cars II & Advanced Clean Trucks rules
Date: Friday, September 23, 2022 4:43:56 PM

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

Megan O'Toole,

I am writing to urge you to approve the Advanced Clean Cars II & Advanced Clean Trucks rules. I have been driving electric for over three years and it is less expensive than a gas car and a whole lot more fun to drive.

Thank you.

Jim Wanner
Burlington, VT

From: [Julie Elmore](#)
To: [O'Toole, Megan](#)
Subject: Advanced Clean Cars II & Advanced Clean Trucks
Date: Wednesday, September 28, 2022 6:45:04 PM

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

I urge the state to pass this critical bill.

Vermont is making an effort to deal with the horrific effects climate change has brought to our state and if we don't take huge, sweeping changes immediately to end the use of fossil fuels as much as possible we will see a state and lifestyle we won't recognize.

This bill is a critical step due to Vt not investing in mass transportation to reduce the amount of gasoline consumed in the state and the sprawl the state has continued to allow vs focusing on keeping businesses and restaurants all in a town center and housing such as large condo units and other apartment living units be built walking and biking distance from all the businesses and entertainment.

We need to end cars, trucks, buses running on gasoline.
Electric cars are going further and further, if we invest in charging stations at every gas station it would be so easy for even someone living in an apartment or condo complex to charge without having home chargers.

Please do not cow tow to the huge lobby efforts of big oil and fossil fuel companies.
The entire state of Vt has a population of a neighborhood in Brooklyn.

We need to see how small our scale is and how easily doable all the issues we have in the state can easily be solved, just like small neighborhoods do in large cities like NYC.

I trust you will bring this to the legislature and urge them to support this bill.

Julie Elmore
160 West Red Rock Rd
Colchester, Vt 05446

--

Julie Elmore
Communications and Administrator
Sudef.org
160 W Red Rock Road
Colchester, Vt. 05446
<https://vimeo.com/157644100>
802-238-4448

From: [Will Patten](#)
To: [O'Toole, Megan](#)
Subject: Advanced Clean Cars II & Advanced Clean Trucks
Date: Wednesday, September 28, 2022 5:06:14 PM

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

Hello,

I am writing in support of these new rules. I hope and expect that my state government will have the courage to seize this opportunity to staunch the tsunami called climate change. I hope you will see the arguments put forward by the fossil fuel industry as more self-serving propaganda.

I also hope that Vermont would use its taxing authority in this effort. I recommend that a tax be levied on all internal combustion engines and that the revenues from that tax be spent advancing zero-emission transportation. Tax the bad; invest in the good.

Be bold! We're running out of time.

--

Will Patten, President
Back to Basics Vermont, Inc.

From: Russ Chapman
To: O'Toole, Megan
Subject: Advanced Clean Cars II & Advanced Clean Trucks
Date: Friday, September 23, 2022 4:00:25 PM

Hi Megan,

I write to voice my total support for the proposed legislation. I currently am doing my part by owning a Tesla Model 3 and charging it at my home which is run by solar panels. While I recognize that not everyone can do what I have done it is still incumbent on the state to help in this regard by forcing the adoption of cleaner energy vehicles.

PLEASE pass this legislation!!!

Thanks you,
Russ

Russ Chapman
101 Mariner Heights
Colchester, VT 05446
c: 781.632.7727
h: 802.800.1183

From: [Charles Byron](#)
To: [O'Toole, Megan](#)
Subject: Advanced Clean Cars II & Advanced Clean Trucks
Date: Wednesday, September 28, 2022 4:33:22 PM

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

Hello,

I'm writing to express my strong support for the proposed Advanced Clean Cars II & Advanced Clean Trucks rules.

There may be all sorts of issues that require further adjustments and investments down the road, in order to successfully switch to zero-emission vehicles. But we desperately need to start, using the best technology and approaches we can, TODAY. Delay will only make our lives worse.

I hope Vermont will show leadership in this critical area.

Sent from my iPhone

From: [Betsy Thurston](#)
To: [ANR - DEC Lev Zev](#)
Subject: air quality climate change
Date: Monday, September 26, 2022 8:00:36 PM

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

Hi,

I attended the Rockingham meeting but had to leave early for a prior scheduled commitment because I learned about the meeting that day.

Vermont continues to think forward, and I'm glad for the initiatives coming our way and what we support.

My comment is as a concern for our Downtown in the planning for more EV chargers and making them readily accessible for travelers off the highway.

Bellows Falls has free chargers right now and they have been extremely successful at bringing people to our Downtown and into our shops.

Will there be any incentives for Downtowns to add more EV chargers and will some of the state money help bring those visitors 5 miles off the highway to spend money in our shops and our Downtowns?

Another concern our group discussed was maintenance of the EV chargers. It sounds like that has been a common "horror" story of EV vehicles is getting to where you need a charge (and driving out of the way to find the charger) and finding the charger out of service or broken or not working correctly.

This was a thought that came from the meeting and in conversation with others, but auto mechanics are aging out, less young people are interested in being a mechanic or at least a lower-paid mechanic. The electric auto industry might be exactly the kind of workforce development VT is looking for and a way to keep their young people happily employed, and well paid and might incentivize them to stay here.

Thank you for your time,

From: [Trevor Summerfield](#)
To: [ANR - DEC Lev Zev](#)
Cc: [William Barrett](#)
Subject: American Lung Association Comments Re: ACT, Heavy-Duty Low NOx Omnibus, Phase II GHG Standards and ACC II Programs
Date: Wednesday, September 28, 2022 10:08:37 AM
Attachments: [Lung Association Adopt ACC2 and ACT 9-30-22.pdf](#)

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

Dear Secretary Moore,

On behalf of the American Lung Association, please find attached comments to urge you to take three critical state clean air actions – adopt the Advanced Clean Trucks (ACT) rule, the Heavy-Duty Low NOx Omnibus, Phase II Greenhouse Gas (GHG) Standards and the Advanced Clean Cars (ACC) II programs.

If you or your team have any questions, please don't hesitate to reach out to me either by email or phone.

Respectfully,

Trevor Summerfield
Director, Advocacy | NY, VT
American Lung Association
O: 518-362-5055 | C: 518-414-1571
Lung HelpLine: 1-800-LUNGUSA
[Lung.org](#) | Trevor.Summerfield@Lung.org
Preferred Pronouns: He/Him/His





September 30, 2022

The Honorable Julie Moore
Agency of Natural Resources Central Office
1 National Life Drive
Davis 2
Montpelier VT 05620-3901

Subject: Support Lung Health through Clean Air Rules for Cars and Trucks

Dear Secretary Moore,

On behalf of the American Lung Association, I am writing to urge you to take three critical state clean air actions – adopt the Advanced Clean Trucks (ACT) rule, the Heavy-Duty Low NOx Omnibus, Phase II Greenhouse Gas (GHG) Standards and the Advanced Clean Cars (ACC) II programs. Transportation continues to be a leading source of harmful emissions and the transition to cleaner vehicles and zero-emission vehicle (ZEV) technologies will provide the much-needed emission reductions for a healthy, livable Vermont for all.

The American Lung Association's *State of the Air 2022* report found that Vermont is home to over 63,000 adults and children living with asthma who need stronger protection against harmful ozone ("smog") and particle ("soot") pollution. Air pollution can cause negative health impacts such as asthma attacks, heart attacks, and lung and cardiovascular diseases. Breathing particle pollution can also cause lung cancer. Our report notes that lower-income residents, people of color, children, seniors and those living with lung or heart illnesses are especially vulnerable to the effects of poor air quality. We also note the increasing challenge of maintaining clean air progress as our climate changes. Because the transportation sector is a leading source of harmful air and climate pollution, we must do everything possible to reduce these sources of health risk.

Therefore, we urge you to ensure Vermont adopts the most health-protective policies to reduce transportation pollution to provide critical health benefits to our residents, especially those most vulnerable to the health impacts of air pollution today. We need to set the following standards to experience the real-world emission reductions needed to breathe cleaner air:

- **Passenger Vehicles:** Adopt the ACC II standards to clean up the passenger vehicle fleet on the way toward 100 percent ZEV sales to protect lung health and reduce carbon pollution. Vermont has long been a leader on clean vehicle policies and should take advantage of the opportunity to accelerate the pathway to zero-emissions to protect our health and our environment.
- **Medium and Heavy-Duty Trucks:** Adopt the Low NOx Omnibus, ACT and Phase II GHG standards to clean up the on-road trucking fleet, ensure real world emission controls and promote the increasing sales of zero-emission trucks over the coming decade to reduce local and regional air quality issues, health disparities and other harms of combustion trucking. A growing number of states, including Massachusetts and New York, have adopted the ACT rule - we must ensure the benefits of zero-emission trucks also come home to Vermont.



The Lung Association's *Zeroing on Healthy Air* report found that Vermont will benefit from a widespread shift to zero-emission transportation and electricity. We found that this transition from 2020 to 2050 will result in \$2.0 billion in public health benefits for the state, 183 premature deaths avoided, 2,880 asthma attacks avoided, and 15,700 in lost workdays avoided.

We urge you to approve these life-saving standards as soon as possible so that all residents can breathe healthy air. We thank you for all the work you do for Vermont. Please contact me, Trevor Summerfield, the Advocacy Director at the American Lung Association with any questions at Trevor.Summerfield@Lung.org.

Sincerely,

Trevor Summerfield
Director, Advocacy
American Lung Association

From: [Dan Castrigano](#)
To: [O'Toole, Megan](#)
Subject: Banning Sale of Fossil Fuel-Powered Cars
Date: Friday, September 23, 2022 12:20:53 PM

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

Hi Megan,

I'm writing with a public comment regarding proposed amendments to existing rules related to low emission and electric vehicles.

I haven't done my research regarding the proposed amendments and am not able to make the session today to offer my comment in the live zoom setting. But I still wanted to send my message.

I encourage you and your team to aggressively push for stricter standards on a short timeline. I know several states have banned the sale of new fossil fuel-powered cars by 2035. Simply put, 2035 is way too late.

The climate and ecological emergency is here. And the best thing we can about it is to stop burning fossil fuels.

Scientists of the world have outlined the transformative change that must happen immediately to have a shot at limiting global heating to 1.5°C. We have to cut emissions.

I encourage you to be aggressive and bold in your decision-making.

Thank you,
Dan Castrigano

From: [Sheila Coutermarsh](#)
To: [ANR - Vermont Climate Council](#)
Subject: CA electric cars
Date: Thursday, September 15, 2022 2:55:32 PM

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

Do NOT adopt California's stance. If you look at the bottom line, electric cars are harder on the climate than gas-powered. How is the electricity generated? How long do the batteries last and what happens to them after they can no longer be charged? The risk of running out of power when stuck in a storm is higher.

Instead of forcing electric cars on people, let's make the politicians use fewer SUVs and airplanes!

Sent from [Mail](#) for Windows

From: [Jim McCullough](#)
To: [O'Toole, Megan](#)
Cc: robb.kidd@sierraclub.org
Subject: Cal. Car Rule
Date: Thursday, September 15, 2022 8:42:34 AM

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

Thank you for your work Meghan!

I attended the BTV meeting and hoped to comment. I was called away prior to that part of the meeting but my official comment is "I fully support VT's participation".

I did participate in the breakout session and have input that was presented there.

Best,

Jim

Jim McCullough

VT State Representative; Gov. Chittenden RD. Williston

jmccullough@leg.state.vt.us

From: [Mary Kinson](#)
To: [ANR - Vermont Climate Council](#)
Subject: CALIFORNIA EMISSIONS REG.
Date: Friday, September 16, 2022 1:54:45 PM

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

Are you folks nuts...

Enough with trying to be like California. we cannot afford these emissions regulations and the economic impact on us does not even come close to any impact on air pollution these regs would have. Until China and India stop building coal fire power plants none of this will have an impact.

Just stop this scam.

Get [Outlook for Android](#)

From: DOUGLAS SAFFORD
To: O'Toole, Megan
Subject: clean car and advanced clean trucks
Date: Thursday, September 29, 2022 7:59:54 AM

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

Megan,

I would like to show my support for the passage of advanced clean cars 11& advanced clean trucks rule- we need more zero-emission electric vehicles in Vermont.

Thanks,
Douglas Safford
2894 glover st
glover, vt. 05839

From: [VFDA INFO](#)
To: [ANR - DEC Lev Zev](#)
Subject: Clean Car Comments
Date: Monday, September 19, 2022 8:38:14 PM
Attachments: [FRED OESCHGER COMMENTS.pdf](#)

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

On behalf of Fred Oeschger, please see attached comments.

Vermont Fuel Dealers Association
P.O. Box 1370
Montpelier, VT 05601-1370

www.vermontfuel.com
(802) 223-7750 Office
(802) 419-3313 Fax
facebook.com/vtfuel
twitter.com/vermontfuel
info@vermontfuel.com

To Whom It May Concern,

Like many others, I am concerned about and have a deep sense of responsibility for the stewardship of our environment.

I am especially concerned about the effect that the worldwide population growth is having on our environment. It seems like there has been a reluctance to integrate discussions of population growth into climate education and advocacy, even though climate change and pollution are tightly linked to population growth. Population growth can also be directly linked to declines in water quantity and quality and significant increases in waste disposal. In my opinion, conversations around climate change and the threat to our environment are too often linked exclusively to the petroleum industry.

Historically, the use of fossil fuels has played a huge part in the industrial growth and advancement of the United States and other countries around the world. This growth and advancement has raised literally millions of people from the depths of poverty and created our middle class.

I have been associated with the petroleum industry in one form or another since a very young age. Currently, I am the owner and president of Fred's Energy, Inc. and D & C Transportation, Inc., a retailer and wholesaler of petroleum products, respectively. For over sixty-five years, I have watched my industry consistently improve itself through research and efficiencies. Consistent investment and innovation has led to improvements in the refinement process, efficiencies in combustion engines and cleaner exhaust emissions. Between 1970 and 2020 alone, the combined emissions of the six common pollutants (PM2.5 and PM10, SO₂, NO_x, VOCs, CO and Pb) dropped by approximately 78 percent. In short, the petroleum industry has demonstrated a dedication to a cleaner environment and an awareness of global warming. Given the opportunity, I believe the petroleum industry can continue to make improvements.

Based upon an observation of our nation's current electrical grid capacity and ability to produce electricity, I have legitimate concerns about our ability to meet increasingly unrealistic government regulations and mandates. I believe that vehicles and buildings powered exclusively by electric power will – over time – gain in both widespread use and market share. I can see a day in the future when the majority of our vehicles and homes are powered exclusively by electricity. But that day is not today, or next year or perhaps even a decade from now. The currently technology and capacity will simply not support that shift. The technological gains necessary to support a meaningful shift towards electric energy will take both years and trillions of dollars in infrastructure upgrades, research and development.

Take electric powered vehicle batteries, for example. The lithium-ion battery pack inside a Chevrolet Bolt runs the full wheelbase of the car and weighs 960 pounds. It contains hundreds of battery cells that are delicate and finicky. When taken apart for repairs, they can be dangerous, and incorrect handling can lead to noxious fumes and fires. Currently, the batteries last 3 to 5 years. The last thing anyone wants is for those batteries to become waste. But until technology improves and allows for recycling and efficiencies, that's exactly what's going to happen. That technology doesn't exist today.

As I wrote earlier, I believe a meaningful shift towards energy independence and a more widespread use of electricity to transport, heat and cool will occur. In time. That time will not be dictated by regulations or prohibitions. It will be dictated by innovation, research and efficiency. Until then, I believe it's important that we continue to encourage more innovation and efficiency in both the petroleum and electric industries. I believe it's important to take a fresh look at domestic oil production in order to lower the cost to consumers and reduce the cost of energy. Lastly, I believe that it's critical that the petroleum and electric industries work together and share resources and technology. Vilifying the petroleum industry will not hasten the advancement of the electric industry. Our goals are the same – cleaner energy, less emissions and a cleaner environment.

Fred Oeschger, President
Fred's Energy, Inc.
D & C Transportation, Inc.

From: [Peter Macfarlane](#)
To: [O'Toole, Megan](#)
Subject: Clean cars & trucks
Date: Wednesday, September 28, 2022 11:04:09 PM

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

Hello

I'll keep this comment brief.

The climate crisis is here and now. If we do nothing about it, it will only get worse. Carbon dioxide and hydrocarbon emissions from the extraction and combustion of fossil fuels are the primary cause of the global increase in temperature, which is responsible for climatic destabilisation. To minimise the further effects of this warming on our climate, it is essential that we cut fossil fuels out of our existence as soon as possible. Every conceivable measure should be taken to achieve this. Working towards a carbon-neutral energy supply and carbon-neutral transport system is a necessary part of a sustainable future. To do otherwise is reckless and irresponsible in the extreme, sacrificing future generations.

Peter Macfarlane
Addison, VT

From: [Richard Butz](#)
To: [O'Toole, Megan](#)
Subject: Clean Cars and Clean Truck sRules
Date: Wednesday, September 14, 2022 6:56:18 AM
Attachments: [Clean Cars & Trucks.pdf](#)

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

Good morning Ms. O'Toole, please add the attached to the testimony.

Richard Butz

Megan O'Toole
Vermont Agency of Natural Resources

9/14/2022

I'm writing in support of the Advanced Clean Car II (ACC) and Clean Trucks rules recently adopted by California and to urge Vermont to adopt them as well.

I live on state routes 116/17 in Bristol, Vermont, a busy connector between Middlebury and south and Burlington and north. Every day thousands of vehicles, many of them heavy trucks, roar past our house leaving behind them a trail of pollutants that dirty every exterior surface of the house and window sills inside.

We know that heavy duty trucks are the largest source of smog producing NOx. We also know that diesel exhaust contains more than 40 known cancer-causing organic compounds making it responsible for 70% of cancer risks related to air toxins. As a member of Vermont Interfaith Power and Light (VTIPL) I am concerned that low income and marginalized populations suffer the most because their communities are most often bordered by highways, ports and warehouse districts. For health reasons alone Vermont should embrace these rules.

Electrifying our vehicles will gradually eliminate the source of the pollutants. It will also contribute significantly to the reduction of carbon dioxide emissions from vehicles and methane emissions from the drilling and refining processes that produce the fuels. Electrifying will also lead to much cheaper transportation options on the long run

Better health outcomes and lower emissions to target Climate Change are clear reasons to support these new rules now. We don't have any time to waste, we've been doing that for far too long.

Richard Butz
40 East Street
Bristol, Vermont
butzra042@gmail.com

From: [caitlin burnham](#)
To: [O'Toole, Megan](#)
Subject: Clean Cars and Trucks act.
Date: Thursday, September 29, 2022 9:29:13 AM

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

As a human on the planet with billions of other humans I know my single voice will do little to make big changes. However, it is my hope that we as Vermonters can at the very least bring our voices together in support of decidedly rejecting the toxic life-threatening power of the Fossil Fuels industry. I support the initiative to pass the Clean Cars and Trucks policy, we absolutely need more affordable zero emission vehicles available to Vermonters and we need to leave fossil fuels behind us. This planet is crumbling under authoritarian power of the fossil fuel industry, and I want Vermont to lead the way in saying enough is enough. Not just for us but for the other billions of small voices out there.

Thank you,
Caitlin Burnham

From: [John McCormick](#)
To: [O'Toole, Megan](#)
Subject: Clean cars plan comment
Date: Thursday, September 29, 2022 3:37:32 PM
Attachments: [Comments to ANR.doc](#)

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

I am submitting the attached comments. And many thanks to your team.

John McCormick

Comments on Agency of Natural Resources Advanced Clean Cars II Plan

Vermont's effort to launch an at-scale plan to shift Vermont drivers to EVs must be comprehensive. There can be no negative impacts for it to achieve its goal

Vermont has 400,000 registered vehicles. The U.S. has 400 million and the world has 4 billion. There is no remedy to global warming if the shift to electric vehicles is not achieved.

Vermont's approach must focus on each component needed to achieve the shift to assure it succeeds. Failure of one component could hinder public purchase of the new EVs. That will cause dealers to file for bankruptcy if they are unable to sell their increasingly large and expensive inventory. A particular concern should be given those eager buyers with a bad or no credit history. Yes, some will qualify for the purchase incentive and benefit from the tax credit; but only those who pay an adequate amount of federal will be able to write off the purchase. For those individuals, their bank loan is an up-front expense with high interest rates that makes the actual cost higher than a high income buyer.

Vermont dealers serving EV customers know the State or federal is going to lower their debt and take advantage by increasing the sticker price. The Attorney General should investigate this practice and demand the dealers use honest accounting.

Our rural State has many transit challenges, from vehicle dependence, weather, road conditions, family credit strength and its aging population. The potential buyers must have confidence the shift will be affordable and risk free. State, credit unions, utility and federal incentives are essential and must be available throughout the proposed ten year plan and beyond. Well planned, carefully deployed, monitored and maintained charging stations are key to customer comfort levels.

The Energy Action Network identified new passenger car, SUV and light truck sales in 2018 at 41,000. In 2022, there are 6,585 plug-in electric vehicles registered in Vermont, 51% (3,358) of which are all-electric vehicles powered solely by a battery. Plug-in hybrid models are the remaining 49%.

The number of EVs in the state increased by 2,225 vehicles; 51% over the past year.

According to the Vermont Vehicle and Automotive Distributors Association (VVADA), plug-in electric vehicles were 5.4% of all new light duty vehicle sales in 2021.

According to the proposed plan (and assuming new vehicle sales remain about the same), in 2026, 25% of new cars, SUVs and light trucks delivered must be EVs. That is 10,250 new EVs. By 2035, that number could exceed or approximate 41,000. This does not account for the known increase of new immigrants coming to Vermont for reasons of safety or as climate refugees. Residents of Southeast U.S. may already be thinking to relocate north. The cumulative total of new EVs, in one decade, according to the proposal could exceed 280,000.

Charging stations are the fundamental key to this plan's success.

There are now 321 locations with public charging for electric vehicles across the state. Vermont has 32 DC Fast Chargers available for EVs equipped with this technology to quickly recharge in about 30-60 minutes for longer trips. Again, the VVADA reported EVs were about 6 percent of total car sales. That begs the question of how many more charging stations (and where) will be needed to accommodate the anticipated 10,250 new EVs in 2026 or 280,000 by 2036.

Locating fast charging stations in safe areas such as 24 hour restaurants, fire and police stations, hospitals, shopping malls, fast food carry-outs, grocery and hardware stores and along interstate highways should be considered by the Agency for Transportation. Owners of business establishments can attract customers and providing that public service compensation should be considered.

According to Future Energy, a Level One, or residential chargers, cost about \$600 for a dedicated 120-volt circuit. However, a home charger is not adequate for commercial enterprises, which need level-two or level-three chargers to handle the load.

A level two electric vehicle charging station costs around \$2,500 for a non public facing and \$5,500 for a public facing dual-port station—it can charge two cars simultaneously in eight to 10 hours.

The highest specification for a commercial EV charging station is level three, or direct current fast charge (DCFC). Level three stations can charge a vehicle in an hour with 480-volt direct current. Level three stations cost around \$40,000 for a single port.

Given Vermont's 321 public charging stations and 32 DC Fast Chargers, how many chargers will be needed for ten times the number of new EVs? More immediately, if EV sales increase rapidly, Agency for Transportation will have to respond quickly to issue several RFP's requesting bids for hundreds of chargers throughout the State, including East of Montpelier. Even the camp at Lake Willoughby should have chargers. Tourists driving EVs will also compete for access to those chargers. It will be the State's responsibility to spend millions of dollars to assure public safety.

President Biden's American Jobs Plan and other infrastructure and clean energy programs call for adding a half million stations. But, this is a onetime appropriation and Congressional politics is not trending towards a shift to EVs.

Another element of the plan must take into account the effect the massive increase of EVs will have on gas stations.

Chittenden County has the most EVs registered (2,404) and highest rate of EV ownership with about 1 EV for every 70 people. Counties west of Montpelier also have high EV ownership compared to Eastern Counties. Aside from avoided gas tax for road and bridge maintenance will be gas station closures as more EVs flood those markets and lost tax base and wages. Will that create new hardships for Vermonters who cannot or will not buy an EV?

These concerns fall upon the State legislators and the annual budget. Designers of the plan must face the economic realities of this essential, absolutely necessary shift to EVs.

How many chargers are located at rental homes and apartments?

The Agency of Commerce and Community Development identifies 75,784 rental properties; about 29% of the State's housing stock. That may not be

a limiting factor for a prospective buyer, if the land owner agrees to install one or several chargers but this is a logical negative. Renters would have to utilize public chargers, if none are available on the property.

The plan must demand standardization to assure all new EVs are equipment with connectors that fit all chargers. This should be priority #1. Coordinating with vehicle and charging station manufactures can reduce the annoyance and danger to distressed drivers not able to utilize a charger because of equipment incompatibility or payment systems.

Another element is how the State will monitor charger maintenance. There is increasing evidence that chargers are being vandalized or cease operation. The State must make in-State monitoring and broadcasting of the working conditions of chargers more robust so the on-board GPS of the new EVs can warn drivers of non-functioning or utilized chargers.

All-wheel drive EVs are essential for Vermonters used to severe driving conditions in winter storms and muddy, icy gravel roads.

Finally, the ANR must coordinate with the Climate Council to raise some of these huge challenges noted above. The Council and citizens have a legislative charge to launch litigation to force the State authorities to comply with the CO2 reductions mandates. In a spirit of cooperation, these entities must consider the impact on ANR's final rule making and implementation, if a court rules an injunction or otherwise force the State to pay a non-compliance penalty.

The magnitude of this plan must be evaluated on can-do bases not a must-do basis.

An example is the realistic impracticality of the start date and percentage of replacement of IGEs. If 2026 is the baseline start date, the number of EVs being delivered each year can be correlated with the number of sales actually occurring in that year.

If sales are not materializing and inventory builds rapidly, there must be an off-ramp to give dealers time to clear the inventory.

This plan will inevitably increase the State's electric load and likely at hours when solar energy will not be available unless a huge increase in excess power is stored

in batteries. That will be an expensive and time consuming investment. Who will pay for these expensive battery stations?

The Climate Council and EAN project huge new EV purchases and heat pump installations to achieve the mandated CO2 reduction. It estimates a need for 40,000 heat pumps all operating on the coldest winter nights as the at-home chargers are operating. The combined load increase is estimated at 100 megawatts.

Where will that increased power originate?

This plan is being formed at the same time the General Assembly, Public Serve Department and the Public Utility Commission and power utilities are mandating and planning for Vermont's renewable energy sources to achieve rapid growth. This, in a State-wide challenge solar and wind developers face applying for and being granted a permit. It is certain; in-State wind towers are not going to be a part of the equation. That leaves ISO-New England and Hydro-Quebec as default providers. Their power resources will all be challenged as New England States are rapidly shifting to electrification as is Vermont. Rates will rise as will use of the natural gas fired generators delivering carbon dioxide in greater amounts than the ANR's plan anticipates reducing.

All of the above is not my opposition to the plan. Rather it begs the obvious. If it succeeds, Vermont will have constructed the transportation infrastructure our children must have to survive what awaits them. This is the time Vermonters have to invest in their children's' ability to adapt to a climate in chaos.

There are many tangents that must be addressed to assure the public and the Council it was designed taking into account all of those limitations, unrealistic timelines and State costs to build the infrastructure and implementation of State government mandates and operations.

If it is not COMPREHENSIVE, this plan won't fly.

John McCormick, Director
Louise Diamond Committee to Protect Next Generations
Bristol, VT 05443

571-331-1066

From: [Kristin Reed](#)
To: [O'Toole, Megan](#)
Subject: Clean cars request for comment
Date: Wednesday, September 28, 2022 3:31:57 PM

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

Somebody has to start this movement!!

I am already looking at hybrids and 100% electric vehicles , and just waiting for enough recharging stations and dealers who have/can get these vehicles! (Preferably at a reasonable cost.)

Thanks, Kristin

From: [Kristin Reed](#)
To: [O'Toole, Megan](#)
Subject: Clean cars request for comment
Date: Wednesday, September 28, 2022 3:31:57 PM

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

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Thanks, Kristin

From: Mary Sullivan
To: O'Toole, Megan
Subject: Clean cars rules
Date: Wednesday, September 28, 2022 4:30:59 PM

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

Megan,

Please adopt the rules to expand access to the Zero emissions vehicles. We must be doing everything we can to avert the worst of the climate catastrophe. We owe it to future generations.

Thank you.

-Mary Sullivan
84 Caroline street
Burlington, VT

From: [Sue Graup](#)
To: [O'Toole, Megan](#)
Subject: Clean Cars, clean trucks
Date: Saturday, September 24, 2022 9:28:09 AM

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

Dear Ms. O'Toole,

I am a Vermont citizen, despairing at the slow pace of our existing systems to address the climate crisis. Since transportation is one of the largest contributors to the crisis, It is simple and straight forward to put clean cars and trucks in the hands of Vermonters. Perhaps a buy-back program would be in order to get gasoline engines off of our roads. I believe we are running out of time.

Vermont is in position to help lead the way.

Thank you for your attention.

Sincerely,

Sue Graup

PO Box 924

Wilmington, VT 05363

suegraup@gmail.com

From: [Kate Williams](#)
To: [O'Toole, Megan](#)
Subject: Clean cars
Date: Wednesday, August 31, 2022 7:25:44 AM

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

I support adoption of the ACC II rule for Vermont. Many people may not even know what a boon it is to drive an electric or plug in hybrid when gas prices are as high as they've been recently. Maintenance costs on my plug in are really low too, just over \$100 per maintenance visit. So switching to electric is not only going to benefit our one and only planet home, but all of us individually! Kate

Single truths, drop by drop, can form a flood that washes away tyranny. Lui Xiaobo

From: [John Bertelsen](#)
To: [O'Toole, Megan](#)
Subject: Clean Cars
Date: Wednesday, September 28, 2022 3:42:34 PM

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

Megan, Clean cars are great, but they are a band-aid to bigger issues. So yes, we should reduce the total CO2 and other pollutant outputs of our transportation system, including the environmental cost of recharging electric vehicles.

The real problem is our land use and transportation patterns. In the US it is almost mandatory to own a car. Long commutes due to lack of town center affordable housing is a big contributor to that. The mall/shopping center model contributes to the need for a car as opposed to full service corner stores.

I could go on, but I think you get my drift.

--

John Bertelsen
Burlington
jo.bertel@gmail.com

From: [Kathleen Guinness](#)
To: [O'Toole, Megan](#)
Subject: Clean emission cars
Date: Wednesday, August 31, 2022 3:43:33 PM

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

Please work as hard as you can to pass a bill for clean or zero emission vehicles. It is crucial to the health of the planet, which is all we've got.

Thank you.

Sincerely,
Kathleen Guinness

From: [Cindy Lewis](#)
To: [O'Toole, Megan](#)
Subject: Clean energy
Date: Thursday, September 22, 2022 9:37:09 PM

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

Hello,

I agree with have a climate crises. Firstly what is going to happen to people who cannot afford an electric vehicle? I bought my last vehicle in 2016, I thought about electric cars, but they are so very expensive. The other problem is they don't go very far with an electric charge. Since Vermont is so rural it would take an entire charge to visit my daughter one way. The other part of this is charging stations. Mechanics who can repair & maintain

I went on the Auto train to Florida from Washington DC to visit my family. My mother is in hospice. On my way back, many people were using this type of transportation because of the cost of fuel. I think it's great and with the rail system this could be expanded to other areas of the US, with help from the Federal Government, and decrease the amount of pollution from cars, since they would travel along with you on the train.

I also happened to meet an electrical engineer who was working with electric motors for the car industry. He said they had come up with an electric engine that recharged itself, however this would not ever be made for the public as the folks in the markets would never allow this type of technology. I do know from living in the 1960s many fuel efficient motors patents were bought out by fossil fuel companies then shelved, it wasn't until the US allowed Japanese cars in the country that were fuel efficient & the fuel embargo of the 1970s when gas went sky high of 59 cents a gallon did the general public begin to buy fuel efficient cars. So in speaking with this man, I concur with him that the markets definitely wouldn't allow an electrical engine for vehicles that recharges itself, although what an amazing thing that would be.

Another part of this is the cost of electricity and how will we be making electricity?

It's great you want to do this, & with climate change it's a must to get people to do this, you have to come up with ways of :

- 1). How people can afford these vehicles, as taking away peoples way of transporting themselves to where they need to be is essential. AFFORDABILITY is Essential.
- 2). Being that we live in a rural area these electric vehicles need to hold a charge better or must be able to recharge themselves, so people can get to work, go shopping for groceries etc, they can get to the hospital or see their doctor etc. vehicles that also be used for the farm industry, shipping industries, building industry etc. They must be AFFORDABLE.
- 3) Utilizing electric trains, since we already have the tracks through Vermont & the US may be another way of being able to travel.

All this comes down to changing our infrastructure, which right now The Republican Party isn't willing to do, which in my opinion is rather stupid. They seem to block any type of federal legislation for anything to do with Climate Change because they are so well funded by fossil fuel industries, who don't believe in climate change along with all the people who are employed by these companies. I saw C-Span a week or so ago where the fossil fuel industry will be getting huge subsidies again.

Answering those questions would be a start. Educating the public on how this will effect them economically as well as the benefit to Mother Earth and our lives is the other. Not MAKING people do this, but ALLOWING people to say yes I want to do this.

I'd say contact President Clinton as he is a master at being able to talk to people in a way that makes them agreeable

to change. He is a master at politics and should share his techniques to younger leaders in ways to speak with the general population.

Climate change is a world problem, & while Europe is concerned enough to propose a Climate treaty, we the US wouldn't sign it. We all need to be in this together. This has to be something the general public wants. Our Country is so divided right now & making people do something they don't understand stand will only fuel the fire.

Just some thoughts here.

Sent from my iPad

From: [Neal Smith](#)
To: [O'Toole, Megan](#)
Subject: Clean energy
Date: Wednesday, September 28, 2022 6:41:32 PM

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

It's my hope that Vermont will get more serious about homeowners and other small scale (potential) producers generating electricity, especially by solar, putting it back into the grid, and earning fair compensation. Not 10-20% more, but just equal to the rate being charged.

I believe this would really boost solar installations, hybrid and electric car sales, etc.

Cheers

Neal Smith

Fletcher

Sent from my phone

From: Janice Solek-Tefft
To: O'Toole, Megan
Subject: Clean omissions
Date: Friday, September 30, 2022 8:14:04 AM

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

Dear Ms. Otoole,

I am writing to advocate for clean transportation in Vermont ASAP!
Our planet is on fire and "Our Brave Little State" can and should be a leader in this regard.

We have been driving a 2005 Subaru Outback with 202,000 miles. We knew we had to do our part to help our planet be sustainable. Definitely money is an issue since we are both retired and on a fixed income.

After much research and watching many You Tubes and going to EV events my husband and I just purchased a 2023 Chevy Bolt EUV. We are so impressed by all of its amazing technology and especially its affordability. We actually had amazing service from Key Chevrolet in South Burlington thanks to Bryan, Nick and the crew.

Please implement clean transportation legislation to help all of us keep our planet intact.

Sincerely,
Janice Solek Tefft
Kenneth Tefft
Underhill, Vermont
05489

Sent from my iPhone

From: [Ellen Green](#)
To: [O'Toole, Megan](#)
Subject: Clean transportation on our roads
Date: Thursday, September 29, 2022 7:24:32 AM

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

Dear Megan,

I am writing to ask that you work for passage of the Advanced Clean Cars II & Advanced Clean Trucks rules. As we watch huge storms and fires wreak destruction around the globe, we need to take every measure possible to mitigate climate change.

Thank you,
Ellen Green
West Rutland

From: [Lydie Bomblies](#)
To: [O'Toole, Megan](#)
Subject: Clean Transportation
Date: Thursday, September 29, 2022 2:30:12 PM

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

Thank you for the opportunity to comment on this important subject.

My husband and I strongly support the Advanced Clean Cars II & Advanced Clean Trucks rules. The target date is 2035. We would like to see it enacted much earlier than that. The sooner the better!

Also, we would like to stress that not only the number of electric vehicles available should be increased, but also their affordability. So far an ev is still a luxury item for many people. Automobile manufacturers should be forced to produce many more affordable ev's!

thank you.

Karl and Lydie Bomblies
Huntington

From: [Francine Levine](#)
To: [O'Toole, Megan](#)
Subject: Clean transportation
Date: Wednesday, September 28, 2022 3:18:41 PM

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It would be really helpful if the clean energy vehicles being brought into the public transportation fleet were available for trips to surrounding states where there are frequent trips for medical services, and to the airport, particularly Burlington. Rides to other states with cost sharing would also help.

From: [libbylaramie](#)
To: [O'Toole, Megan](#)
Subject: Clean transportation
Date: Wednesday, September 28, 2022 4:56:57 PM

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

I support clean transportation but have reservations with implementation. We cannot afford to take a short sided approach. We must consider the capacity of the power grid. We must not rely on hidden costs to residents of our state that strengthening the grid may cause. Where will the batteries for the cars/trucks be produced and recycled? What will happen when the batteries have reached the end of their effectiveness? Who will incur replacement costs?

Vermont has created a short sided approach to housing. We should not follow suit with transportation.

Sent from my Verizon, Samsung Galaxy smartphone

From: JENNIFER HANDY
To: O'Toole, Megan
Subject: Clean Vehicle Standards Public Comment
Date: Wednesday, September 28, 2022 8:45:07 AM

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

Hi Megan,

Zero emission vehicles of any type do not exist & I doubt they will by your future dates.

Please keep reading.

This legislation is just trading a host of problems from fossil fuels to a host of problems with electricity.

We know the issues with fossil fuels.

Let's look at what your solution requires.

- Mining for rare earth minerals in countries that have no clean air regulations.
Who have no intention of increasing their mining to meet all of this increased demand
- shipping all that stuff here with diesel fuel
- batteries that are the size of the vehicle, that are very heavy for our roads, wear out tires & roads more quickly & we have no good disposal worked out for them.
- a low estimate of how much electricity is generated from fossil fuels is about 70%, so you get this point, when you charge your car with electricity it's made with fossil fuels. you're not lowering a carbon foot print.

That's just from the top of my head. So yes innovation will occur in this field, but so will it in all other fields, like in fossil fuels, nuclear (which is the answer) and everything else.

Best Regards,

Jennifer Handy

From: [Mark Klinedinst](#)
To: [O'Toole, Megan](#)
Subject: comment in support of the Advanced Clean Car II and Advanced Clean Truck Rules
Date: Friday, September 9, 2022 12:48:30 PM
Attachments: [Microsoft Word - Sierra Club clean air transportation.docx.pdf](#)

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

Megan,

Hope all is well with you. Attached is a comment in support of the Advanced Clean Car II and Advanced Clean Truck Rules. Take care, Mark

Mark Klinedinst
MKlinedinst@mac.com
Cell: 601-307-4060

Home:
1314 Marble Island Rd
Colchester, VT 05446

Please support the Advanced Clean Car II and Advanced Clean Truck Rules

Vermont has been a leader in environmental stewardship and to keep that leadership and help grow our economy in a sustainable way we need to adopt rules like California's recent efforts to mandate only zero-emission cars and light-duty trucks for sale by 2035.

Not only would this rule save Vermonters money in reduced transportation costs, it would help us develop the electric infrastructure that would give our industries a head start in know-how for creating a sustainable future. Cleaner air would help reduce needless disease and death in our state and also we would be part of making a healthy future by lowering our carbon pollution.

Respectfully,

Mark Klinedinst, Ph.D.
Emeritus Professor of Economics
Colchester, VT

From: [Dirk Thomas](#)
To: [O'Toole, Megan](#)
Subject: Comment on Advanced Clean Cars II Rule
Date: Thursday, September 29, 2022 12:11:13 AM

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

Megan - please count me as an advocate for the passage of the Advanced Clean Cars II & Advanced Clean Trucks Rules. Their passage will help VT meet its' Climate Goals and help enable us to reach zero emissions.

Thank you for your kind attention to this matter.

Judith Grealish-Thomas
Shrewsbury VT Resident

From: [Stephanie Solt](#)
To: [O'Toole, Megan](#)
Subject: comment on electric vehicles
Date: Saturday, September 24, 2022 8:36:37 PM

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Several thoughts:

1. It's all well and good to require that all vehicles be electric, but without a sufficient number of charging stations distributed throughout the state, how can electric vehicles operate?
2. I understand that the cost of replacement batteries is prohibitive. It doesn't make sense to purchase an electric vehicle if battery replacement (and disposal) is problematic.
3. We get better mileage with our gas powered car than an electric car. And we can go further on a tank of gas than an electric vehicle one charge.
4. I also understand it takes quite a while to charge an electric vehicle while a gas fill up is minutes.

I don't think the technology is ready for widespread use.

Stephanie Solt
Burlington, Vermont

--

Stephanie Solt
trillium348@gmail.com

From: [Jackie Folsom](#)
To: [O'Toole, Megan](#)
Cc: josephvtfb@gmavt.net
Subject: comment on LEV ZEV proposed rule
Date: Thursday, September 29, 2022 4:45:25 PM

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

Good afternoon -

Please consider this the public comment from Vermont Farm Bureau regarding the Advanced Clean Trucks proposed rule based on the public hearing via zoom which I attended on September 6, 2022.

Despite a comment which I caught at the beginning of the meeting - that agriculture had been considered when promulgating this rule - there was no discussion on agriculture during the hearing. Also, when I questioned legitimate challenges using EVs to pick up or deliver agricultural commodities, no one seemed to have an answer.

Vermont Farm Bureau is deeply concerned that no consideration has been given to the challenges facing large trucks - whether tractor trailers or smaller "thermos-type" trucks, logging trucks or sap trucks - which include use during the middle of the night when picking up milk on farms or traveling with full loads of milk from northern Vermont all the way to plants in Massachusetts during the winter. Just recently, a milk truck driver had to wait for more than 4 hours at a processing plant in Vermont due to problems with the unloading docks. He had a full load of milk that had to be refrigerated while he waited.

Several questions are raised due to these conditions:

1. How long does it take for these larger trucks to re-charge if they are all required to be EVs?

2. Are special chargers required?

3. Where are these chargers located? I have recently heard the State of Vermont receiving \$21 million from the federal government to set up EV chargers at every exit on I89, I91 and I93 as well as various places along main routes. How many of these chargers will be available at any given time? Are they all able to be used by any type of EV?

4. Do refrigerated milk trucks require more electricity to not only keep the truck moving but the milk cold? Are they separate units and so require separate charging?

5. I understand this rule is based on the California statute - do you have any background information on how they are dealing with agricultural vehicles - and is that really relevant, given the warmer climate in most of California?

6. Has the State of Vermont investigated the impact on not only dairy-hauling vehicles but feed trucks, sap trucks and logging trucks?

7. Has the State of Vermont done an economic impact on the agricultural and forestry economies based on the requirements of the proposed rule?

8. How will roads and bridges be maintained and updated if the tax from diesel fuel use goes to zero? There was a comment by someone on the zoom that "they were working on it." Is there a task force for this?

9. Someone also said that they do not think electric rates will go up, because more folks will be using electricity and it will spread the cost out. I would like to see

statistics that prove this comment. Personally, our electric company is asking for a 14.9% rate increase for this year, because they have had to buy electricity off the grid due to usage and unavailability of renewal power in their portfolio - and that electricity off the grid costs more! Please share information that proves the opposite.

10. Was there any input requested from the agriculture or forestry industries (including sugarmakers?) If so, when and what was the outcome of their comments?

There was also a slide shown during the presentation that attempted to prove operating an EV was cheaper than operating a diesel truck - but the diesel truck comparison included the cost of diesel over the life of the truck. However, there was no such comparison to the cost of EV vehicles which will (according to ANR or VTRANS) be taxed to cover the value of the diesel tax for road and bridge maintenance.

The other huge problem will be availability of diesel fuel in the state. If everyone is driving EVs due to this rule (whether you believe it will be mandatory or not), will anyone still be selling sufficient diesel fuel to supply agriculture and forestry?

Also, it's my understanding that if a company purchases a diesel vehicle outside of Vermont, that DMV will not register it. How is that not mandating that everyone own and operate an electric vehicle?

At this point in time, Vermont Farm Bureau is not in support of a rule that appears to have neglected to consider impacts to the agricultural and forestry economies. Farmers and loggers do not have the ability to "share" increased costs; in fact, many go out of business just because of decisions such as this rule.

Thank you for the opportunity to comment.

Jackie Folsom, Legislative Director
Vermont Farm Bureau

From: [Michele Hill](#)
To: [O'Toole, Megan](#)
Subject: Comment on Proposed Amendment to LEV and ZEV rules
Date: Wednesday, September 28, 2022 5:04:30 PM

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

I am in favor of amending Vermont's rule on LEVs and ZEVs to be consistent with California's Advanced Clean Cars II (which amends Advanced Clean Cars I, currently in effect), Advanced Clean Trucks, Low NOx (oxides of nitrogen) Heavy-Duty Omnibus, and the Phase 2 Greenhouse Gas Rule.

My husband and I have owned an EV for 2.5 years, and have been very satisfied. We look forward to the build-out of Level 2 chargers throughout the state (and, indeed, throughout the country!), as well as more financial incentives to purchase EVs. Let's make moving to EV's a no-brainer!

Thanks,
Michele Hill

From: [Martin Maitner](#)
To: [O'Toole, Megan](#); ANR - DEC Lev Zev
Subject: Comment on Vermont's goals concerning cleaner transportation and mitigating harmful effects on the climate
Date: Thursday, September 29, 2022 9:37:27 PM

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

Hello,

I am writing to express my endorsement/agreement for Vermont to follow California's lead in transitioning out the sale of gas fueled vehicles for personal transportation. I am of the opinion that (non-plugin) hybrid vehicles should NOT be considered ELECTRIC vehicles, since they are powered 100% by gas, and recharge their tiny batteries by burning gas. One could make the case that a hybrid which can be plugged in could (in theory) be an EV if the owner consistently plugs it in, and mostly only drives the extremely short range under electric only. I can point out that a Chevy Volt (plug-in hybrid) for example, runs the gas engine almost continuously when colder than 50ish degrees Fahrenheit. In Vermont's cold climate, and because of the rural nature of our state, and long distances that people tend to travel; a vehicle should really only be classified as an Electric Vehicle if it is powered solely by battery (BEV) --- Not plug-in hybrid, and especially NOT gas hybrid (non-plugin).

Again, I support the transition off of fossil fuels for transportation. I hope, for the sake of other people's children, that Vermont state leads this "charge" with bold action, and steadfast resolve.

Thank you,

Martin Maitner
[\(802\)324-9749](tel:(802)324-9749)
Mottyski82@gmail.com

From: [Linda Puzan](#)
To: [O'Toole, Megan](#)
Subject: Comment onAdvanced clean car and truck 2035
Date: Wednesday, September 28, 2022 3:20:23 PM

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

I am in total agreement that we should be requiring zero emission electric vehicles to VT or other zero emissions vehicles asap. The world is moving in this direction and while the fossil fuel industries may look to block this, they are holding back the inevitable. Global warming is here now and we already are seeing the negative effects.

Linda Puzan

From: [Linda Gray](#)
To: [O'Toole, Megan](#)
Subject: comment: Advanced Clean Cars II and Advanced Clean Truck Rules
Date: Thursday, September 29, 2022 9:52:25 AM

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

- 1) Transportation is the single largest contributor to climate pollution in Vermont.
- 2) There aren't enough zero-emissions vehicles in Vermont to meet demand.
- 3) The Vermont Climate Action Plan calls for Vermont to adopt requirements for zero-emission car and truck sales (the Advanced Clean Cars II and Advance Clean Truck rules) by the end of this year.

For all these reasons, I urge that Vermont adopt the Advanced Clean Cars II & Advanced Clean Trucks rules.

The passage of these rules is a critical step in our state's transition to a zero-emission future.

Linda Gray
175 Kerwin Hill Rd, Norwich, VT 05055
802-649-2032

From: [Brenda J Bean](#)
To: [ANR - DEC Lev Zev](#)
Subject: Comments for Public Hearing, Barre, 9.21.22
Date: Thursday, September 22, 2022 9:54:56 AM
Attachments: [Comments about Advanced Clean Cars Rules.docx](#)

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

My husband and I attended last evening's public hearing at the Barre Aldrich Library but had to leave before we could offer my comments, which I am hereby attaching and embedding into the body of this email. Thank you for entering them into the official record. Brenda Bean

September 21, 2022

Aldrich Library
Barre Public Hearing

Dear Governor Scott and others:

I want to speak briefly to encourage the State of Vermont to adopt the Advanced Clean Cars (ACC) II rule that California has already approved for itself. I am not going to speak about the technical aspects of the rule, only about values and practicalities.

-
Regarding values: I have a grown daughter who has suffered from asthma for her whole life, especially when the air quality is poor due to distant wildfires or pollution. That is one reason I get mad whenever I see big trucks release black smoke into the air. I've been told the black smoke is caused by the use of diesel fuel and that "heavy-duty trucks are the largest source of smog-forming pollutants in the world." This has to stop! I don't want other children to suffer, and as a state, we can't afford to have our children and grandchildren sick. Switching away from diesel fuel to electric vehicles/trucks would help protect their health and the health of the earth.

-
Regarding practicalities: Vermont does not produce oil but does produce electricity, a lot of which is produced – and increasingly so - from renewable sources. Using electricity instead of oil/gas is a great way to support our own economy, like eating food grown locally. Like food, transportation is not an optional expense, yet many people cannot afford the best options. Electric cars and trucks are still too expensive for most Vermonters to buy. Subsidies and other financial supports are needed to help people switch from gas to electric cars, especially in the accelerated timeframe of these rules.

So, I hope BOTH that these rules are adopted AND that the State figures out how to help its citizens purchase electric vehicles. Thanks for listening!

Sincerely,

Brenda Bean
370 Dodge Farm Road

Berlin, VT 05641

(802) 279-4935

Brenda.Bean@comcast.net

September 21, 2022

Aldrich Library

Barre Public Hearing

Dear Governor Scott and others:

I want to speak briefly to encourage the State of Vermont to adopt the Advanced Clean Cars (ACC) II rule that California has already approved for itself. I am not going to speak about the technical aspects of the rule, only about values and practicalities.

Regarding values: I have a grown daughter who has suffered from asthma for her whole life, especially when the air quality is poor due to distant wildfires or pollution. That is one reason I get mad whenever I see big trucks release black smoke into the air. I've been told the black smoke is caused by the use of diesel fuel and that "heavy-duty trucks are the largest source of smog-forming pollutants in the world." This has to stop! I don't want other children to suffer, and as a state, we can't afford to have our children and grandchildren sick. Switching away from diesel fuel to electric vehicles/trucks would help protect their health and the health of the earth.

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So, I hope BOTH that these rules are adopted AND that the State figures out how to help its citizens purchase electric vehicles. Thanks for listening!

Sincerely,

Brenda Bean

370 Dodge Farm Road

Berlin, VT 05641

(802) 279-4935

BrendaJBean@comcast.net

From: [sue.pfaff](#)
To: [O'Toole, Megan](#)
Subject: Comments on Proposed 2035 Electric Car Deadline
Date: Wednesday, August 31, 2022 4:28:59 PM

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

Ms O'Toole,

I am not clear about all the guidelines in the Electric Car Proposal, but I do have these concerns:

1. Affordable or heavily subsidized.
2. Function well in Vermont cold weather.
3. Ease of recharging, even from owner's house that may not have a garage.
4. All vital and EXPENSIVE auto parts are carefully housed and protected from road salt ie the EXPENSIVE battery not suspended over the road.

Thank you.

Sue Pfaff

P.O.Box 70

East Dover, Vt. 05341

From: [Matt Cota](#)
To: [ANR - DEC Lev Zev](#)
Subject: Comments on Proposed Low Emission Vehicle and Zero Emission Vehicle Regulations
Date: Friday, September 30, 2022 3:50:21 PM
Attachments: [ACC ACT Comments 9.30.22.pdf](#)

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

See attached comments on behalf of a coalition of trade associations on the Proposed Low Emission Vehicle and Zero Emission Vehicle Regulations.

Please confirm receipt.

Matt Cota
matt@vermontfuel.com



Northeast
Agribusiness
& Feed Alliance



Secretary Julie Moore
Vermont Agency of Natural Resources
Department of Environmental Conservation
Davis Building - 3rd Floor
One National Life Drive
Montpelier, VT 05620-3520
anr.declevezev@vermont.gov

September 30, 2022

RE: Comments on Proposed Amendments to the Air Pollution Control Regulations, Low Emission Vehicle and Zero Emission Vehicle Regulations

Secretary Moore,

Thank you for the opportunity to comment on the "Proposed Amendments to the Air Pollution Control Regulations, Low Emission Vehicle and Zero Emission Vehicle Regulations" (the "Proposed Regulations").

The Agency of Natural Resources ("ANR") has proposed an amendment to its low emission vehicle ("LEV") and zero emission vehicle ("ZEV") rules, which incorporate by reference California's motor vehicle emission standard regulations¹ and its ZEV mandate. Specifically, ANR proposes to amend its existing rules by adopting California's Advanced Clean Cars II (which amends Advanced Clean Cars I, currently in effect), Advanced Clean Trucks, Low NOx (oxides of nitrogen) Heavy-Duty Omnibus Regulations, and California's Phase 2 Greenhouse Gas ("GHG") Rule. While this ambitious plan is a laudable effort, Vermont's air quality goals need not be met through the sacrifice of consumer choice and affordability.

INTRODUCTION

Vermont's Global Warming Solutions Act charges ANR with the challenge of providing safe, reliable energy, while reducing GHG emissions economy wide. To achieve these goals, ANR should take an "all-of-the-above" approach that fairly and objectively quantifies lifecycle carbon emissions regardless of fuel type, neither underestimating the GHG emission sources involved in EVs nor overlooking significant reductions attributable to liquid transportation fuels. Under the Proposed Regulations, Vermont runs the risk of exaggerating the carbon reductions from EVs, while underestimating the benefits of

¹ The LEV Rules set standards for emissions of criteria air pollutants and greenhouse gases from passenger cars, light-duty trucks, and medium- and heavy-duty vehicles and engines that are delivered for sale or placed in service in Vermont. The ZEV Rules set standards that ultimately require auto manufacturers to deliver more electric vehicles to Vermont.

various liquid fuels. As a result, Vermont may miss the opportunity for greater actual carbon reductions at even lower costs.

As Vermont plans its carbon reduction strategy in the transportation sector, it will need a broad and inclusive approach to ensure reliability in the fuel supply chain for transportation fuels. In its rulemaking, ANR should consider the implications that a strategy focused solely on electrification may have on community decision-making, consumer choice, and the unintended consequences that the reliance on electrification presents. Finally, social and economic justice cannot be achieved through mandates that restrict consumer choice and increase costs for all Vermonters. Preserving consumer choice and ensuring the best cost alternative while lowering GHG emissions is key to meeting the requirements in the Global Warming Solution Act.

BACKGROUND

ANR recommends an aggressive mix of policies oriented toward increasing sales of ZEVs. The ZEV regulations' focus favors battery electric vehicles ("BEVs") and proposes a complete shift to 100% light-duty ("LD") ZEV sales by 2035 through adoption of California's Advanced Clean Cars II ("ACC II") program. In the mid- and heavy-duty ("MHD") sector, ANR recommends adoption of California's Advanced Clean Trucks ("ACT"), Low NOx Heavy-Duty Omnibus Regulations, and California's Phase 2 GHG Rule.

COMMENTS

Transportation Sector Decarbonization Should Embrace All Technologies

While ZEVs may provide options to help reduce GHG emissions, reliance on those technologies alone ignores the full lifecycle GHG emissions of ZEVs and the benefits of low-carbon liquid fuels and other emerging technologies. Other technologies and fuel sources can result in equal or greater reductions in GHGs than ZEVs, while offering more consumer choice. ANR should approach GHG reductions in the transportation sector with an eye toward an affordable and equitable approach that incorporates all potential options, including liquid fuels, to ensure that Vermonters maintain economic security, safety and reliability. ZEV mandates present significant risks to the stability of the transportation sector, ranging from raw material availability to charging infrastructure accessibility to grid reliability. ZEVs are also more expensive on average than their internal combustion engine ("ICE") vehicle counterparts and unaffordable for many households. In the first calendar quarter of 2022, the average price of top-selling BEVs in the U.S. was about \$20,000 more than the average price of top-selling ICE vehicles.²

² Registration-weighted average retail price for the 20 top-selling BEVs and ICE vehicles in the U.S. S&P Global, *Tracking BEV prices - How competitively-priced are BEVs in the major global auto markets?*, May 2022.

Vermont should evaluate the merits of all fuels and vehicle technologies on a full lifecycle basis. The National Bureau of Economic Research has acknowledged that "...despite being treated by regulators as 'zero emission vehicles', EVs are not necessarily emissions free."³ Battery production, transport, disposal and recycling generate emissions and waste impacts and present national security concerns—including resource access, supply chain vulnerability, and cybersecurity risks for charging stations.⁴ The GHG emissions associated with these activities are material, and the failure to include them in ANR's impact statement and supplemental information will result in Vermont undercounting GHG emissions from EVs in the transportation sector.

The Proposed Regulations fail to consider the many advanced technology efforts that are underway to reduce GHG emissions from the transportation sector, including the advances in low-carbon fuels and technologies for on-board capture of combustion-related carbon dioxide ("CO₂") emissions for subsequent use or permanent sequestration. By embracing an all-encompassing approach to decarbonization that includes low-carbon fuels and on-board CO₂ capture, Vermont can identify more efficient and cost-effective pathways to reduce emissions and create incentives for emerging emissions reduction technologies.

Electrification Mandates in the Transportation Sector May Spur Grid Reliability Issues

Vermont should consider electrical grid reliability issues that are prevalent and on-going in California. California residents are frequently asked to reduce their electricity use during peak hours, including charging of EVs, to avoid widespread blackouts in the midst of a heat wave. With increasing reliance on solar and wind generation, California has struggled with reliability hazards due to power inverters that serve solar and wind farms not being able to "ride-through" short-term disturbances, as occurred on four separate occasions between June and August 2021.⁵ For communities that lack back-up power resources, a loss of electricity in an all-EV world means a loss of personal mobility and an inability to get to and from work or school, secure food or obtain medical support.

Since Vermont is a winter peaking state, this issue is of significant concern during the coldest weeks of the year as well. Vermont has experienced a fair number of severe weather events that "have had profound impacts on infrastructure. Hurricane Irene was declared a federal emergency in nearly all counties and left well over 100,000 residents without power, while the Great Ice Storm of 1998 provided constant precipitation for several days. These kinds of events are unlikely to be isolated", and should be considered

³ See <http://www.nber.org/papers/w21291>

⁴ See <https://www.nationalobserver.com/2021/01/21/opinion/electric-cars-have-dirty-little-recycling-problem-their-batteries>.

⁵ Behr, Peter and Plautz, Jason, *Grid monitor warns of U.S. blackouts in 'sobering report'*, E&E News (May 19, 2022) and North American Electric Reliability Corporation *2022 Summary Reliability Assessment* (May 2022).

by ANR.⁶ Severe weather incidents like these have contributed to Vermont's ranking in the fourth quartile amongst U.S. states for the total time and frequency of utility interruptions, and in the third quartile for the average time required to restore service.⁷

Reliance on EVs may have unintended, negative consequences, especially in relation to the electricity generating sector. Spurring such an increase in load and demand to the electricity generating sector, which intermittent renewable generation such as solar and wind cannot meet during peak demand,⁸ will cause the Vermont Electric Power Company ("VELCO") to disconnect "EV load . . . for a number of hours during peak periods".⁹ According to VELCO's 2021 Long-Range Transmission Plan, "it was expected that the [Vermont transmission] system would fail to meet reliability criteria in the 20-year horizon under the high load forecast" due to the acerbating electrification of heating and transportation.¹⁰ Vermont's bulk system meets current needs, but as demand increases from electrification, including EVs and building electrification, reliability margins will continue to thin.

According to VELCO's 2021 Vermont Long-Range Transmission Plan:

"[D]ue to the performance characteristics of in-state generation, Vermont has relied heavily on its transmission network to import power from neighboring states. Following the shutdown of the Vermont Yankee generation plant in 2014, Vermont has become a net importer at all hours from New York, New Hampshire, Massachusetts, and Canada in order to meet the state's load requirements. Because of the disproportionate reliance on solar PV generation, high imports during peak load conditions will continue over the long term".¹¹

As other states implement plans to increase their respective reliance on electrification in the home heating and transportation sectors, the net supply of electricity to the New England states will be further constrained and less reliable. According to VELCO, "[t]he demand associated with EVs is predicted to become a noticeable element of the load in

⁶ Vermont Agency of Transportation, *NEVI Plan* at 50 (August 1, 2022).

⁷ SAIDI, SAIFI and CAIDI reliability metrics. U.S. EIA, *State Electricity Profiles – Vermont, 2020*.

⁸ VELCO, *2021 Vermont Long-Range Transmission Plan* at 16-17 (on solar, stating "Since solar PV effects have shifted the Vermont summer demand peak to after sundown, this analysis assumed that incremental solar PV would contribute 0 MW at the summer peak hour. Similarly, since winter peaks occur after dark, solar PV also contributes 0 MW at the winter peak hour") (also stating "Vermont generators are small and the vast majority of them are not base load generators, which are expected to run at or near full capacity nearly every day for hours at a time").

⁹ VELCO, *2021 Vermont Long-Range Transmission Plan* at 6, https://www.velco.com/assets/documents/2021%20VLRTP%20to%20PUC_FINAL.pdf

¹⁰ *Id.*

¹¹ *Id.* at 18.

the mid- to long-term”.¹² Moreover, in Vermont’s National Electric Vehicle Infrastructure (“NEVI”) Plan dated August 1, 2022, the Vermont Agency of Transportation specifically warns that “[u]nmanaged or unplanned for EV charging could cause utilities to incur significant costs to maintain grid reliability and create challenges for grid operators.”¹³

ANR should not make the same mistake as California by relying entirely on electrification to reduce GHG emissions from transportation. Rather, the Proposed Regulations should reflect a more varied approach to decarbonization, including state market incentives for a variety of biofuels. Mandates can have unintended consequences, and ANR should embrace all potential options for reducing GHG emissions in the transportation sector.

ANR Must Provide a More Transparent and Reasoned Economic Analysis

ANR has not prepared a comprehensive costs model with respect to the Proposed Regulations. Without doing so, ANR cannot adequately consider alternatives that emphasize affordability alongside emissions reductions. ANR’s analysis also fails to convey the consequences and difficulties associated with the major technology transformation required under the proposal. For example, ANR does not quantify any indirect impacts associated with the Proposed Regulations, and neglects less defined risks and potential impacts to Vermonters. Additionally, ANR has not estimated what Vermont’s total costs of compliance would be under the Proposed Regulations. Neither has ANR provided any discussion quantifying impacts to Vermont’s job market. Further, ANR’s analysis in support of the Proposed Regulations is inconsistent and incomplete. For example, ANR’s “Summary Document” states that “ACC[II] is not a requirement that consumers purchase an electric vehicle... ACC II is a requirement imposed *solely* on auto-manufacturers to deliver a certain annual percentage of ZEVs to Vermont”.¹⁴ But in ANR’s “Supplemental Information”, ANR states “[t]he proposed regulation *will have an impact on individual vehicle owners* in Vermont in the form of operation and ownership costs”, without estimating what those costs are expected to be.¹⁵

Moreover, ANR merely relies on and extrapolates from California’s data and analysis without adequately considering differences in scale, climate, terrain, and state economies that will have profound impacts on Vermont’s adoption and experience implementing the proposed rules. State specific and regional factors are material and must be considered. In sum, due to ANR’s urgency to expediently adopt the Proposed Regulations to stay on

¹² *Id.* at 22.

¹³ Vermont Agency of Transportation, *State of Vermont National Electric Vehicle Infrastructure Plan* at 53 (August 1, 2022).

¹⁴ ANR, *Regulation Summary Document* at 3 (emphasis added).

¹⁵ ANR, *Supplemental Information for Vermont’s Low Emission Vehicle and Zero Emission Vehicle Proposed Rules* at 6 (emphasis added).

California's implementation schedule and to maintain alignment with other states that have adopted California's ZEV regulations under § 177 of the Clean Air Act ("CAA") (42 U.S.C. § 7507), ANR is rushing its consideration and the passage of the California rules without performing an independent analysis to ensure the proposed rules are properly and thoroughly vetted for application in Vermont. ANR should present a transparent, technology-neutral approach that allows for innovation that would better serve Vermont's most vulnerable communities. For example, Vermont Agency of Transportation highlights practical challenges inherent to EV adoption in its NEVI Plan, stating that "[d]ue to Vermont's mountainous terrain and cold winters, [EV] buses are not always able to reach the 100-mile range that can be achieved in optimal driving conditions. The longest route piloted so far extends 90-miles in a day, necessitating the driver to recharge midday to complete the route".¹⁶ ANR falls short in communicating such challenges associated with singular reliance on electrified transport in its assessment of the Proposed Regulations.

Vermont stakeholders should also have an opportunity to evaluate the data, costs, and assumptions underlying such an alternatives analysis before ANR finalizes its proposed rulemaking. It is critical from the outset to design Vermont's transportation program to minimize the potential for price shocks and supply disruptions. This is of particular concern regarding the ACT regulation. As stated in comments submitted by the Vermont Truck and Bus Association, this regulation will result in a reduction in payload (and increased freight costs) due to the added weight of the battery. Range issues, as well charging locations and the amount of time needed to charge, will increase the cost of delivering goods and services in Vermont from a California compliant truck.

CONCLUSION

The proposed sale requirements that mandate a shift to EVs at the expense of ICE vehicles will significantly impact supply chains, consumer costs, electric power infrastructure, domestic energy security, and will have international consequences. ANR must carefully consider the implications if reality cannot keep pace with the ambitions of the Proposed Regulations. Other states are facing similar questions and deciding to forge their own paths rather than adopt California's program:

- Virginia prefiled legislation on September 6 to repeal its 2021 adoption of California's ZEV program, citing a preference to "put Virginians back in charge of Virginia's auto emission standards and its vehicle marketplace."¹⁷
- Colorado has indicated that it will not adopt ACC II, citing "While the governor shares the goal of rapidly moving towards electric vehicles, he is skeptical about

¹⁶ *Id.* at 59.

¹⁷ House Speaker Todd Gilbert, see <https://apnews.com/article/technology-california-pollution-climate-and-environment-e661fe8026ab9ed8d5d521a14bee0858>

requiring 100% of cars sold to be electric by a certain date as technology is rapidly changing.”¹⁸

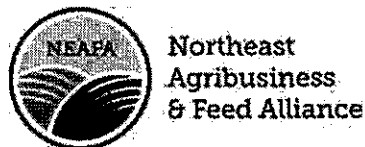
- Minnesota, similarly, is not planning to adopt ACC II, with Governor Tim Walz offering “We are not California. Minnesota has its own plan.”¹⁹

ANR should support and foster technological innovation in the transportation sector. Doing so could create a foundational framework that would attract more investment into the market which would help Vermont achieve its long-term climate goals. ANR should evaluate an alternative that prioritizes least cost emission reductions across the economy by relying more heavily on technology neutral approaches.

Thank you for the consideration of our comments.

Sincerely,

Associated General Contractors of Vermont
Associated Industries of Vermont
Barre Granite Association
Northeast Agribusiness & Feed Alliance
Vermont Fuel Dealers Association
Vermont Retail & Grocers Association



¹⁸ Colorado Energy Commission, see <https://apnews.com/article/technology-california-clean-air-act-vehicle-emissions-standards-ebb48c13e24835f2c5b9cb56796182a>.

¹⁹ *Id.*

From: [Matthew LeFluer](#)
To: [O'Toole, Megan](#)
Subject: comments on the Advanced Clean Cars II & Advanced Clean Trucks rules Standard!
Date: Wednesday, September 28, 2022 3:20:59 PM

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

Greetings. My Comment is. To support and have accessibility in mind within equity transparency inclusion diversity and acceptance moving forward for Vermont's phone number bowl citizens and individuals that need advancement and clean transportation across all spectrums or forms or modes of transportation The future is in our grasps Let's move forward together for a better place a healthier state for us all within the Green mountains state of Vermont we cherish love and have compassion for and determine to do the works good deeds for individuals that need clean affordability transportation options and vehicles. Statewide

From: [Trens names](#)
To: [O'Toole, Megan](#)
Subject: Comments on the new advanced clean car II and clean track policy adoption by Vermont
Date: Wednesday, September 28, 2022 7:38:26 PM

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

The new policy reforms as presented provide a eutopian form of deliverance from a would be situation of continuous growth of air pollutants and the related cycles of unmitigated problems resulting as evidenced from global warming crises which include the random wild forest fires from great temperatures and drying vegetation and also increase in waterlevels due melting of polar ice which has resulted in some areas, great floods.

The wind drafts from warm current have increased thereby also increasing occurrences of wind twisters. "Thousands of losses in many forms from lives, inflastrature and food shortage have been attributed to these events "

This seemingly small step of policies that those in the multi billion cooperations of fossil fuel companies yearn to fall, is on its own small but a step among the thousands that will lay a landmark to make airpollution a thing of the past in both Vermont and surrounding areas that may adopt a similar policy towards a greener planet.

The policy however may fall short as it fails to incorporate the economic impact of the reforms on the already established inflastructures, the social standards of the gas car, the visiting vichicles from the neighborhood, the rigidity of businesses surviving on gas related opportunities from mechanics providing lubricant services to engine repair services.

The list of pitfalls maybe topped by the revenue brought in by the fossil energy cooperations and the inability for electric power to completely eliminate the need for energy while keeping reliability as a factor in consideration and winter. The social standards dictate that in a worst case scenario, a Jerrycan of power cannot be purchased but a fuel Jerrycan can be.

So to cap it all, the policy is good with advantages outweighing disadvantages which mainly come from rigidity and conservativeness, the inability to change due to profits, business standing and the rest in that line.

People should be taught to adopt during this period to 2035 cause the emissions are worsening the global climatic change crisis.

Teaching by example should be applied in defending these new reforms by clearly stating that wild fires, twisters and climatic change are as a result of global warming and the policy is a one of the few steps aimed at mitigating the problem cause due to profits from fossil fuels, loss of lives and property every year has been attributed to the crises and the sources of the problem who are the cooperations supporting fossil fuels and related companies can't be attributed to the problem.

Eng. Bukenya Jamal
Environmental engineer

Thank you very much

From: [Katherine Slye-Hernandez](#)
To: [ANR - DEC Lev Zev](#)
Subject: Comments on Vermont Low Emission Vehicle and Zero Emission Vehicle Rules
Date: Thursday, September 29, 2022 8:16:58 AM
Attachments: [Vermont Advanced Clean Cars Proposed Regulation Comment Letter.pdf](#)

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

Hello,

Attached please find comments from the Vermont Retail Lumber Dealers Association on the Advanced Clean Cars Proposed Regulation.

Thank you and have a great day,

Katherine Slye-Hernandez, PhD

Director of Legislative and Regulatory Affairs

Northeastern Retail Lumber Association

Direct Line: 518-880-6376 | nrla.org

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ABMA is powered by NRLA and CSA.

LBM EXPO: Dec. 7-8, 2022, Earth Expo & Convention Center, Mohegan Sun, Uncasville, CT

September 29, 2022

Secretary Julie Moore
Agency of Natural Resources

Dear Secretary Moore,

I am writing in response to the Proposed Vermont Advanced Clean Cars Regulation on behalf of the Vermont Retail Lumber Dealers Association (VRLDA). The VRLDA represents independent lumber and building material (LBM) suppliers and associated businesses in the state and is represented by the Northeastern Retail Lumber Association (NRLA), a regional LBM organization with over 1,100 members. VRLDA has 13 retail lumber members with 28 locations throughout the state of Vermont.

We support the state doing anything it can to get our state closer to zero emissions, but we have some questions and concerns about the regulation as currently written that we want to bring to your attention for consideration before the official regulation is proposed.

One concern we have is that the Agency on Natural Resources claims this regulation is only about manufacturing and cars imported into Vermont for sale. However, in the proposed regulation there is language about purchasing, which is concerning to our members who are business owners. This language about purchase is used, or alluded to, multiple times in your proposal.

1. You say: “ACCII is not a requirement that consumers purchase an electric vehicle, or that dealers sell a required volume of electric vehicles. ACCII is a requirement imposed solely on auto manufacturers to deliver a certain annual percentage of ZEVs to Vermont, **increasing to 100% ZEVs by 2035.**”
 - a. If by 2035, all cars for sale in VT are required to be ZEVs, how is this not a requirement that residents of VT buy an electric car? There only option at this point would be to purchase from out of state if they cannot afford the ZEVs, which could be a barrier to many if they cannot get out of state to purchase a car/truck they can afford.
 - b. Do you plan to penalize Vermont residents or businesses who must then go out of state to purchase a car/truck they can afford?
2. The ACT **requires the sale** of at least 30% zero-emission trucks by 2030 (depending on vehicle classification). By model year 2035, zero-emission truck sales would need to be 55% of Class 2b – 3 truck sales, 75% of Class 4 – 8 truck sales, and 40% of truck tractor sales. Light-duty trucks (e.g., the F-150 Lightning) are covered under ACCII, discussed above.
 - a. Are these goals about availability and deliverable EVs to VT or is it about **sales** of these EVs in VT? The language above says “sales,” indicating this is a requirement for purchasing.
 - b. How will this target be hit? Which businesses will be required to purchase such trucks to reach this goal?
3. You say: “There is no expected direct cost on small businesses, defined as businesses having 3 or fewer medium- and heavy-duty vehicles, under the ACT Regulation. **No manufacturers or fleets who are regulated under this rule** are considered to be small businesses. Small businesses who operate trucks will not be required to purchase zero-

emission trucks but may independently decide to do so. This may enable cost savings for small businesses due to electric trucks' lower cost of operation.”

- a. What fleets are regulated under this rule? You repeatedly say that this regulation only impacts manufacturers, but the language above indicates you are regulating fleets, which businesses have to make deliveries.

If this regulation is truly only about regulating vehicles brought into Vermont for sale, we encourage you to reconsider the language indicated above to remove references to purchasing and sales, both of which are regulating the end user/purchaser in Vermont, or to define what you mean in those instances by those terms.

Another concern our association has is the increased costs of doing business with electric vehicles. Charging times vary depending on what type of charger you have; charging a passenger pick-up truck at home without a DC fast charger can take up to 14 hours, and these trucks are much smaller than trucks used by businesses with fleets of trucks to deliver materials to construction sites and customers. In addition to the upfront increased costs to businesses to buy large and medium electric trucks, there are additional concerns about costs related to buying chargers and paying a driver for long periods of time to charge a truck during a delivery or to get back from one if the charge will not get the driver out to the delivery and back.

This is all without considering the increased cost of electricity that businesses must bear in order to charge these vehicles, the cost of which has only been increasing in recent years. All of these increased costs will only drive up the cost of goods and services in Vermont because especially small businesses, like our VRLDA members, cannot afford to absorb these costs without raising prices.

Related to these cost and price concerns, we have a few questions we would like you to consider addressing:

1. What kind of increased efficiency for charging the batteries will be required in the out years? Again, the time it takes a business to charge vehicles during a delivery is lost time and money.
2. How are regulations going to address the need for this process to be much quicker, and thus the batteries to be able to be charged faster, as the number of electric vehicles increases and there is more demand overall on the grid for such services?

There are other more broad questions we encourage the Agency to consider before publishing a final version of this rule.

1. What negative impact could this rule have on availability of trucks and cars for purchase in Vermont? What if manufacturers decide to no longer sell in VT due to this rule if they cannot keep up with the required schedule?
2. What plans do you have to expand this rule to cars and trucks used in the state, especially for state contracts? Do you plan to require businesses who contract with the state to utilize EVs for any work they do on said contract?
3. You do not sufficiently address the need to increase the electrical grid capacity given the expected increase in EVs in Vermont, especially if people install chargers at their homes.
 - a. Expansion of the grid needs to be first before the increase in EVs otherwise you have an issue on your hands of people being unable to drive because they cannot charge their cars.

4. Do your calculations of costs/cost savings include the increased costs to individuals and businesses increased electric bills due to needing to charge these vehicles? It does not appear that it does, and it should since that is a real cost increase.
5. You say: "Increased use of public charging stations may also have benefits to retail businesses operating or close to charging stations. Many charging stations are located in areas with available shopping, food, or other services such as dry cleaning. Additionally, Vermont businesses that are contracted to install stations will benefit from the rapidly growing network."
 - a. How long do you expect businesses to incur the cost of charging people's cars as you increase the number of EVs in the state?
 - b. Do you expect that businesses will start to charge people to charge their car at the mall or at a store? And how does that new cost impact the cost/savings analysis you conducted?

VRLDA again applauds the state and your agency for seeking to find ways to make our state more environmentally friendly. However, as explained above, we do have some concerns we hope you will consider and address before finalizing and proposing this rule.

Should you have any questions about our concerns, please do not hesitate to reach out to myself or our legislative representative, William Smith at bill@smithlawvt.com or 802-485-6100.

We appreciate your consideration of our questions and concerns.

Sincerely,

Katherine Slye-Hernandez

Katherine Slye-Hernandez, PhD
Director of Legislative & Regulatory Affairs
Northeastern Retail Lumber Association
kslye-hernandez@nrla.org

From: [Chase Whiting](#)
To: [ANR - DEC Lev Zev](#); [Stevens, Rachel](#); [O'Toole, Megan](#)
Cc: [Elena Mihaly](#); [Robb Kidd](#); [Ben Edgerly Walsh](#); [Miller, Johanna](#); [Jordan Giaconia](#); [Lauren Hierl](#)
Subject: Comments supporting Vermont's proposed adoption of the Advanced Clean Cars II, Advanced Clean Trucks, Low NOx Heavy-Duty Omnibus, and Phase II Greenhouse Gas Emissions Standards rules
Date: Friday, September 30, 2022 2:27:35 PM
Attachments: [ACC II ACT HDO Phase II Comment Letter 9.30.22.pdf](#)

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

Dear Secretary Moore, Ms. O'Toole, and Ms. Stevens,

Please find attached Comments supporting the Agency of Natural Resources' proposal to adopt the Advanced Clean Cars II, Advanced Clean Trucks, Low NOx Heavy-Duty Omnibus, and Phase II Greenhouse Gas Emissions Standards rules (together, the "Rules"). We ask that you please include these Comments in the rulemaking record. Collectively, the signatories to these Comments represent more than 30,000 Vermont members, Vermont member businesses, and Vermont activists. The signatories also represent many tens of thousands of members across New England and the country.

Thank you for your hard work in preparing the rulemaking materials and in shepherding the Rules forward.

Sincerely,

Robb Kidd
Vermont Conservation Program Manager
Sierra Club Vermont

Jordan Giaconia
Public Policy Manager
Vermont Businesses for Social Responsibility

Johanna Miller
Energy & Climate Program Director
Vermont Natural Resources Council

Lauren Hierl
Executive Director
Vermont Conservation Voters

Ben Edgerly Walsh
Climate & Energy Program Director
Vermont Public Interest Research Group

Ron McGarvey
President
Vermont Interfaith Power and Light

Chase Whiting
Staff Attorney, Clean Energy & Climate Change
Conservation Law Foundation

Andrea Marpillero-Colomina, PhD.
Sustainable Communities Program Director

GreenLatinos

Paulina Muratore
Transportation Campaign Manager
Union of Concerned Scientists

Joel Levin
Executive Director
Plug In America

Alissa Burger
Regional Policy Director
CALSTART

Patricio Portillo, Senior Advocate, Climate & Clean Energy
Kathy Harris, Clean Vehicles and Fuels Advocate
Natural Resources Defense Council

Dave Robba
Manager, State Policy
Ceres

Larissa Koehler, Director, Vehicle Electrification & Senior Attorney
Andy Su, Attorney, Clean Transportation
Environmental Defense Fund

Chase Whiting
Staff Attorney
Conservation Law Foundation
Pronouns: he/him

15 East State Street, Suite 4
Montpelier, VT 05602

P: 802-622-3009
E: cwhiting@clf.org

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The Honorable Julie Moore
Agency of Natural Resources Central Office
1 National Life Drive
Davis 2
Montpelier, VT 05620-3901

Subject: *Comments in Support of the Advanced Clean Cars II, Advanced Clean Trucks, Low NOx Heavy-Duty Omnibus, and Phase II Greenhouse Gas Emissions Standards Rules*

Dear Secretary Julie Moore,

On behalf of the undersigned organizations, we write to express our strong support for the Advanced Clean Cars II (ACC II), Advanced Clean Trucks (ACT), Low NOx Heavy-Duty Omnibus (HDO), and Phase II Greenhouse Gas Emissions Standards (Phase II) rules (together, the Rules). These Rules are fundamental components of needed progress, and we urge the Agency of Natural Resources (the Agency) to adopt the Rules by December 1, 2022, to ensure Vermonters realize the cost savings, economic advantages, health benefits, and reduced climate damaging pollution made available by the Rules. We also ask the Agency to make several minor and common-sense adjustments. Under ACC II, we urge the Agency to ensure that programs qualifying for Environmental Justice (EJ) credits are quickly put in place, and that the Agency commits to immediately engaging with community members and environmental justice organizations to develop and implement eligible EJ programs. Under the ACT Rule, we ask the Agency to adjust the early action credits to ensure that the sales requirements do not lose their effectiveness, and we urge the Agency to initiate a separate rulemaking in 2023 to adopt a fleet reporting requirement.

Our organizations represent over 30,000 Vermont members, Vermont member businesses, and Vermont activists who join us in supporting bold, equitable, and essential climate action. Our organizations also represent many tens of thousands of members across New England and the country. We request that these comments be included in the formal record as expressing support from the undersigned organizations, individually and collectively.

Vermont, and indeed the entire world, is in the midst of a climate crisis brought on by excessive fossil fuel combustion. The Intergovernmental Panel on Climate Change is clear that to fend-off the worst consequences of climate change, climate damaging emissions must be rapidly reduced *now* and become *net-negative*¹ by approximately 2050.² This decade is humanity's final opportunity to avert the worst impacts of climate change. Vermont must help by doing its part in the global effort. Vermont has already committed to binding greenhouse gas emission reduction

¹ The IPCC defines "net negative CO2 emissions" as being "reached when anthropogenic removals of CO2 exceed anthropogenic emissions." See *IPCC, AR6 Climate Change 2021: The Physical Science Basis*, at 15 n.23 (2021), <https://www.ipcc.ch/report/ar6/wg1/#SPM>.

² See, e.g., *id.* at 15-18.

targets,³ and has identified these Rules as key policies to help the State achieve those reductions.⁴ The Agency should take all available steps to quickly implement the Rules.

We know that rapid action is vitally needed to blunt the harms already being caused by climate change, and to mitigate the extreme threats Vermonters will face if we continue to dump carbon into the atmosphere.⁵ We also know that disproportionately disadvantaged communities bear the greatest burdens from climate change.⁶ Transportation is the largest source of climate-disrupting pollution in Vermont, accounting for about 40% of Vermont's total greenhouse gas emissions.⁷ And fossil fuel-powered cars, trucks, and buses account for the vast majority of that pollution. Indeed, the "combination of our mostly rural nature, dispersed land use patterns and heavy reliance on fossil-fueled vehicles is a significant reason why Vermonters emit more greenhouse gasses per capita than any other state in New England."⁸ With the recent setbacks in implementing the Transportation Climate Initiative Program in the Northeast, and the lack of any other clear policy or regulatory tools to achieve certain and significant pollution reductions in the transportation sector, adopting the Rules in a timely fashion is critical to meeting Vermont's emissions requirements.⁹

The health impacts from vehicle pollution are also enormous, and must be addressed. In addition to contributing to increased global temperatures and intensifying climate disasters, vehicle pollution contributes to higher rates of asthma, bronchitis, cancers, and premature deaths. Historically marginalized communities disproportionately suffer from unhealthy air due to carbon monoxide, fine particulate matter, nitrogen oxide, and smog produced from transportation fossil fuels. Enacting the Rules will reduce the sources of that toxic air pollution, providing meaningful benefits to Vermonters.

Vermonters are also disproportionately burdened with volatile gasoline prices because we are more dependent on personal vehicles than many other Americans.¹⁰ The Rules help us flip that

³ Vermont Global Warming Solutions Act, Vt. Laws No. 153, H.688 (2020) [hereinafter, "Act 153"], <https://aoa.vermont.gov/sites/aoa/files/Boards/VCC/ACT153%20As%20Enacted.pdf>.

⁴ Vermont Climate Council, *Initial Vermont Climate Action Plan*, 253 (Dec. 2021) [hereinafter, "Initial Vermont CAP"].

⁵ See, e.g., Initial Vermont CAP.

⁶ Act 153, Sec. 2(5).

⁷ Vermont Agency of Natural Resources, Air Quality & Climate Division, *Vermont Greenhouse Gas Emissions Inventory and Forecast: 1990-2017*, at 11 (May 2021) [hereinafter, "Vermont GHG Inventory"], https://dec.vermont.gov/sites/dec/files/aqc/climate-change/documents/Vermont_Greenhouse_Gas_Emissions_Inventory_Update_1990-2017_Final.pdf.

⁸ Initial Vermont CAP at 68.

⁹ *Id.* ("[T]ransforming the state's transportation system [is] essential to meeting the emissions reduction requirements of the Global Warming Solutions Act.").

¹⁰ See Art Woolf, *Vermonters love the environment. So why are we driving so much more?*, BURL. FREE PRESS (Aug. 30, 2018) ("The statistically average Vermonter drives about 2,000 more miles per year than the average American."), <https://www.burlingtonfreepress.com/story/money/2018/08/30/fossil-fuel->

script. Vermonters stand to gain significant transportation savings and financial benefits¹¹ under the Rules. If the State delays action, however, Vermonters stand to sustain significant financial harms. The Vermont Legislature has already found that “[d]elaying necessary policy action to address the climate crisis risks significant economic damage to Vermont.”¹² That legislative finding is backed up by research.¹³ Such harms can be diminished by taking action now, and the Rules present a significant opportunity to do so.

Transportation transformation is needed to zero-out emissions from that sector. This suite of Rules will support that transition by making more electric cars, trucks, and buses available to Vermonters, and by slashing harmful pollution. The Rules also will help ensure that Vermont is a leader in transportation decarbonization, and help Vermonters access a global supply of new technologies that provide meaningful benefits to Vermont and its residents. Additional benefits created by the ACC II, ACT, HDO, and Phase II Rules are described below.

ADVANCED CLEAN CARS II RULE

On August 25, 2022, the California Air Resources Board (CARB) unanimously approved the ACC II program. That program starts zero-emission passenger vehicle sales requirements at 35% in model year (MY) 2026 and gradually increases that requirement to 100% by 2035. It also tightens passenger vehicle criteria pollutant tailpipe standards. It does not prevent Vermonters from owning or registering their current fossil fuel vehicles or purchasing and registering used fossil fuel vehicles either before or after 2035. The regulation applies to manufacturers.¹⁴

Now that California has adopted these standards, other states may also move to adopt them pursuant to the federal Clean Air Act¹⁵ and state law. Vermont has such authority under existing State law,¹⁶ and should use that authority to implement the ACC II Rule. If Vermont does so in 2022, Vermont will be able to enforce the ACC II requirements for MY 2026. Delaying adoption would mean that Vermonters miss out on zero-emission vehicles (ZEV) they would otherwise be able to acquire, and that Vermonters lose the many important co-benefits ACC II provides—such as improved health, air quality, climate safety, and financial savings. To ensure that Vermont achieves such benefits as soon as possible, we urge the Agency to adopt the ACC

[consumption-vermonters-driving-more-miles-their-cars/1127742002/](https://www.driveelectricvt.com/about-evs/cost-of-ownership/).

¹¹ See, e.g., Drive Electric Vermont, EV Operating Cost History, <https://www.driveelectricvt.com/about-evs/cost-of-ownership/>.

¹² Act 153, Sec. 2(3).

¹³ Hal Harvey, et al, *The Costs of Delay*, Energy Innovation Policy & Technology, 14 (2021), https://energyinnovation.org/wp-content/uploads/2021/01/Cost_of_Delay.pdf.

¹⁴ See, e.g., Vt. Agency of Nat'l Resources, *Vermont Low and Zero Emission Vehicle Regulations, Proposed Filing* (June 24, 2022).

¹⁵ See 42 U.S.C. § 7507.

¹⁶ See 10 V.S.A. §§ 567 & 558.

II Rule by December 1, 2022.¹⁷ There is no time left for delay.

Vermont was one of the first states to adopt the California passenger vehicle standards and has been successfully implementing them since MY 2000. ACC II merely strengthens those already existent standards. The ACC II regulation starts at 35% ZEV sales in model year 2026 with an interim target of 68% sales by 2030 and a 100% target in 2035. It also provides flexibilities—such as the ability to utilize early compliance credits, environmental justice credits, and historical credits—that will help reduce the regulatory burden on manufacturers in states with lower sales than California. The current Advanced Clean Cars Program ZEV mandate levels out ZEV sales at approximately 7-8% starting in model year 2025 and maintains that requirement for subsequent years. Due to the current level of ZEV sales across the United States, and globally, it is clear that this 7-8% sales target is far below the current state of the market and does not reflect real-world sales. As of September 2022, Bloomberg’s New Energy Finance projects that market forces alone will make electric vehicle sales reach 23% of U.S. passenger vehicle sales in 2025, and 52% in 2030.¹⁸ The Rules will facilitate and accelerate that already occurring process and strengthen the current standards.

The ACT II Rule is also in line with Vermont’s climate and air quality requirements and goals, is necessary, feasible, a key strategy to reduce emissions from the transportation sector, and will help accelerate the transition to the clean transportation future that is occurring across the United States and world. And with strong automaker commitments and federal laws—such as the Infrastructure Investments and Jobs Act and the Inflation Reduction Act—more charging infrastructure will be placed throughout Vermont, and electric vehicles will become more accessible and affordable.

I. Automakers Are Already Investing in Electric Vehicles

During the ACC II hearing at CARB, no automaker opposed the regulations. While many stated that hitting the ZEV targets could be a challenge, none said it was infeasible. Considering that automakers have already announced over \$97 billion dollars of investments to support the transition towards ZEVs,¹⁹ and almost all car companies have committed to increasing the number of ZEV models in their fleets over the next decade, the ACT II standards merely support and accelerate the industry’s transition to ZEVs.

II. Vermont Drivers Want Electric Vehicles

Electric vehicle sales in Vermont have increased dramatically in the State since joining the original Advanced Clean Cars program in 2000. And Vermonters’ interest in electric vehicles continues to increase—ZEV vehicle purchases in May 2022 were just over 6% of sales, and

¹⁷ 10 V.S.A. § 593(b), *as modified by Act 153, Sec. 4.*

¹⁸ Ira Boudway, *More Than Half of US Car Sales Will Be Electric by 2030*, BLOOMBERG (Sept. 20, 2022), <https://www.bloomberg.com/news/articles/2022-09-20/more-than-half-of-us-car-sales-will-be-electric-by-2030>.

¹⁹ Atlas Public Policy EV Hub, Automakers Dashboard, <https://www.atlasevhub.com/materials/automakers-dashboard>.

surveys have shown that 40% of Vermonters are interested in purchasing an electric vehicle.²⁰ Zero-emission vehicle sales in June 2022 surpassed 8.4% of new vehicle sales across the country and increased from 4.9% in June of 2021.²¹

III. Sufficient Infrastructure Exists to Support the ACC II Rule in Vermont

While the majority of electric vehicle drivers charge their vehicles overnight at home, there are currently 306 public locations in Vermont with a total of more than 764 electric vehicle charging stations throughout the state.²² While the move towards 100% ZEV sales by 2035 will require more infrastructure to support those vehicles on the road, the regulation's year-over-year ramp up provides the State with ample time to ensure that there is a robust charging network available to drivers. And the state is already seeing increased funding available to support charging infrastructure in the state. For example, under the Infrastructure Investment and Jobs Act, Vermont will receive \$21.2 million through 2026—the start of the ACC II program—to further expand the charging infrastructure available throughout the state.²³ Vermont also appropriated an additional \$12 million in the FY23 budget to support targeted electric vehicle charging infrastructure deployment.²⁴ And Vermont's Department of Public Service has identified pathways to support the growing load on Vermont's grid from electric vehicle charging.²⁵

IV. The ACC II Rule Will Provide Vermonters Air Quality and Health Benefits

Gasoline and diesel vehicles are known emitters of dangerous air pollutants, including nitrogen oxides (NOx) and particulate matter (PM). To combat pollution from the transportation sector, the American Lung Association states that adopting Advanced Clean Car regulations is an important strategy to clean up air quality, as zero-emission vehicles do not emit toxic tailpipe pollutants.²⁶ Cleaning up the transportation sector provides significant health benefits as well. According to the Lung Association's *State of the Air* report, more than 137 million people in the United States live in counties with unhealthy levels of ozone or particulate pollution.²⁷ Air

²⁰ Vermont Agency of Transportation, *State of Vermont, National Electric Vehicle Infrastructure Plan*, 16 (Aug. 1, 2022),

https://vtrans.vermont.gov/sites/aot/files/VERMONT_2022%20NEVI%20State%20Plan_FINAL.pdf.

²¹ See *supra*, note 19.

²² U.S. Department of Energy, Alternative Fuels Data Center, *Alternative Fueling Station Locator* (last visited Sept. 28, 2022), <https://afdc.energy.gov/stations/#/analyze?region=US-VT&fuel=ELEC>.

²³ Vermont National Electric Vehicle Infrastructure Plan: https://vtrans.vermont.gov/sites/aot/files/VERMONT_2022%20NEVI%20State%20Plan_FINAL.pdf.

²⁴ Vermont Law, No. 185, G.600(a)(3) & G.600(b)(1) (2022).

²⁵ See Vermont Department of Public Service, *Comprehensive Energy Plan*, 127 (2022), https://publicservice.vermont.gov/sites/dps/files/documents/2022VermontComprehensiveEnergyPlan_0.pdf.

²⁶ American Lung Association, *Comments on the Advanced Clean Cars II Workshop* (Nov. 5, 2021), [ALA ACC II Workshop Comments](#).

²⁷ American Lung Association, *State of the Air: Key Findings* (2022), <https://www.lung.org/research/sota/key->

pollution, including that from the transportation sector, can cause asthma attacks, lung cancer, shortness of breath, heart attacks, stroke, preterm birth, and premature death. By moving towards 100% ZEVs, which emit zero tailpipe emissions, these health concerns can be addressed. In California, the ACC II program is anticipated to cumulatively reduce toxic air pollution in the passenger vehicle fleet by 57,090 tons of reactive organic gasses, 83,850 tons of oxides of nitrogen, and 5,330 tons of fine particulate matter by 2040, relative to a baseline without implementation of the Rules.²⁸ As described in Section V (ACC II EV-REDI Modeling Results), immediately below, similar air quality benefits will also accrue to Vermonters.

Moreover, “the pollution associated with transportation disproportionately impacts disadvantaged communities, thus having unequal public health consequences and burdens.”²⁹ Under Vermont law, rules like ACC II “must prioritize the allocation of investment of public resources to these communities and minimize, to the greatest extent practicable, potential regressive impacts.”³⁰ ACC II is well aligned with existing Vermont laws and priorities.

V. ACC II EV-REDI Modeling Results Show Additional Beneficial Outcomes

The EV-REDI modeling tool developed by Synapse Energy Economics for Sierra Club, shows that adoption of ACC II in Vermont would likely lead to the following results and benefits by 2035:

- 58% of its light-duty vehicle stock would be EVs (up from 1% in 2021)
- It would have 0.32 million light duty EVs on the road (up from 0.01 million in 2021)
- Its light-duty vehicles would consume 93 million gallons of gasoline (down from 287.83 million gallons in 2021)
- Light-duty tailpipe CO₂ emissions would be 0.77 MMT CO₂ (down from 2.39 MMT CO₂ in 2021)
- Light-duty vehicle NO_x emissions would be 0.21 thousand MT (down from 1.19 thousand MT in 2021)
- Light-duty vehicle PM_{2.5} emissions would be 0.01 thousand MT (down from 0.03 thousand MT in 2021)
- Light duty-vehicle SO₂ emissions would be 5 MT (down from 16 MT in 2021)

VI. The ACC II Rule Helps Vermont do its Part to Address Climate Change

In addition to improving air quality and health, reducing transportation emissions is a key strategy to combating climate change. The transportation sector’s tailpipe emissions account for

[findings#:~:text=The%20%E2%80%9CState%20of%20the%20Air,of%20particle%20pollution%20or%20Oozone.](#)

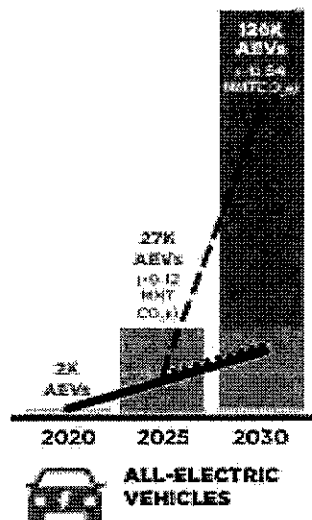
²⁸ International Council on Clean Transportation, *Benefits of adopting California medium- and heavy-duty vehicle regulations under Clean Air Act Section 177, 2* (Nov. 2021), <https://theicct.org/wp-content/uploads/2021/12/state-level-hdv-emissions-reg-FS-oct21.pdf>.

²⁹ Initial Vermont CAP at 70.

³⁰ Act 153, Sec. 2(5) (2020).

about 40% of the state’s overall greenhouse gas emissions.³¹ Average temperatures in Vermont have already increased by 2 degrees Fahrenheit in the summer and 4 degrees Fahrenheit in the winter.³² Vermont is already experiencing acute droughts, shorter winters, more tick-borne illness, and increased cyanobacteria pollution in our public waters. To avoid the worst effects of climate change, it is imperative that Vermont reduce emissions from the highest emitting sector—transportation. ACC II is the tool to do this.

Implementing ACC II could place the State on a dramatically better path towards achieving the greenhouse gas emission reduction requirements mandated by the Global Warming Solutions Act,³³ which requires ANR to adopt rules identified by the Climate Action Plan no later than December 1, 2022.³⁴ The pending Rules—including ACC II—were all named in the Climate Action Plan.³⁵



- Business-as-usual projection implied by existing policies as of fall 2021
- ... Estimated increase from FY23 budget investments¹
- - - Estimated increase due to ACC II (best case scenario)

Energy Action Network, *Annual Progress Report for Vermont*, at 8 (2022), https://www.eanvt.org/wp-content/uploads/2022/08/EAN-report-2022_web.pdf

³¹ Vermont GHG Inventory at 11.

³² See Vt. Dept. of Health, *Climate Change in Vermont* (last visited Sept. 29, 2022), <https://www.healthvermont.gov/health-environment/climate-health/climate-change>.

³³ See, e.g., 10 V.S.A. § 578(a). See generally Act 153.

³⁴ See, e.g., 10 V.S.A. § 593(b), as modified by Act 153, Sec. 4.

³⁵ See Initial Vermont CAP at 253 (identifying the ACC II, ACT, HDO, and Phase II Rules as regulations that must be adopted by the Agency by December 1, 2022, pursuant to 10 V.S.A. § 593(b), and under existing rulemaking authority found in 10 V.S.A. §§ 567 & 558).

VII. *The ACC II Rule Provides Economic Benefits and Cost Savings for Vermonters*

The Vermont Climate Action Plan correctly notes that Vermont's reliance on fossil fuels is a significant drain on our economy.³⁶ "Vermonters collectively spend over \$1 billion on fossil fuels for transportation. Approximately 70% of those dollars leave the state's economy every year. In contrast, electricity purchases keep far more dollars in Vermont. Over 50% of every dollar spent on electricity stays here. Moving to more efficient, electric vehicles will keep more of the money we collectively spend on transportation in the state's economy and in Vermonters' pockets."³⁷

In Vermont, charging an electric vehicle is like paying \$1.50 per gallon of gasoline.³⁸ And those costs are more likely to remain stable over time than volatile fossil fuel costs.³⁹ This is because Vermont regulates utility electricity rates,⁴⁰ and because Vermont's electricity sector is largely fossil fuel free.⁴¹ Moreover, two of Vermont's electric utilities (Green Mountain Power and Burlington Electric Department), which together serve the bulk of Vermonters,⁴² offer reduced electricity rates for electric vehicle charging,⁴³ making EV charging even more affordable when compared to transportation fossil fuel costs. Under Vermont law, all Vermont electric utilities must adopt electric vehicle rates by June 30, 2024, thereby expanding such benefits statewide.⁴⁴

For rural Vermonters, the economic benefits of owning an electric vehicle will be especially significant. The Vermont Climate Action Plan notes that a typical Vermont rural driver "can save approximately \$1,500 every year by switching from a conventional gasoline car to a comparable electric vehicle, which is even more significant over the life of the vehicle."⁴⁵

³⁶ Initial Vermont CAP at 68.

³⁷ *Id.* (citations omitted).

³⁸ See Drive Electric Vermont, EV Operating Cost History, <https://www.driveelectricvt.com/about-evs/cost-of-ownership>.

³⁹ *Id.*

⁴⁰ See, e.g., Title 30 of the Vermont Statutes Annotated.

⁴¹ See Vt. Dept. of Public Service, *Vt. Comprehensive Energy Plan*, 243 (2022); see also 30 V.S.A. §§ 8004-8005 (the Vermont Renewable Energy Standard).

⁴² See Vt. Dept. of Public Service, Electric Utility Service Territory Map (2022), <https://vtpsd.maps.arcgis.com/apps/webappviewer/index.html?id=9f9b060d475d4ed49795fdd98aa895fc>.

⁴³ Green Mountain Power EV Charging Rates (last accessed Sept. 29, 2022), <https://greenmountainpower.com/rebates-programs/electric-vehicles/ev-charging-rates/>; Burlington Electric Department EV Charging Rates (last accessed Sept. 29, 2022), <https://www.burlingtonelectric.com/evrate/>.

⁴⁴ See Vermont Laws, No. 55, H.433, Sec. 33(b) (2021), <https://legislature.vermont.gov/Documents/2022/Docs/ACTS/ACT055/ACT055%20As%20Enacted.pdf>.

⁴⁵ See Initial Vermont CAP at 69, *discussing* Union of Concerned Scientists, *Rural Communities Could Benefit Most From Electric Vehicles* (Nov. 12, 2020), <https://www.ucsusa.org/about/news/rural-communities-could-benefit-most-electric-vehicles>.

Although the upfront costs of some (though certainly not all) electric vehicles are currently higher than comparable gas-powered vehicles, many EV owners already see cost savings over the lifetime of their vehicles. This is because operating expenses—including fuel and maintenance costs—are typically lower for electric vehicles.⁴⁶ A recent survey by Consumer Reports found that battery electric vehicle and plug-in hybrid electric vehicle owners pay around half as much to maintain and repair their vehicles compared to owners of conventional cars.⁴⁷ The same Consumer Reports study found that fuel savings alone for an electric vehicle compared to a gasoline powered vehicle can be \$4,700 or more over the first seven years.⁴⁸ A U.S. Department of Energy study found that the estimated scheduled maintenance cost for a light-duty battery-electric vehicle totals about 6.1 cents per mile, while a conventional gasoline powered vehicle is around 10.1 cents per mile, which amounts to roughly 40% cost savings on maintenance on a per mile basis for electric vehicle drivers.⁴⁹

In addition, electric vehicle owners spend 60% less, on average, by charging with electricity rather than filling up with gas. Taking the full cost of ownership into account, for all nine of the most popular electric vehicles on the market below \$50,000, lifetime ownership costs were “many thousands of dollars lower than all comparable ICE [internal combustion engine] vehicles’ costs, with most EVs offering savings...between \$6,000 and \$10,000.”⁵⁰ These savings were even more pronounced for used electric vehicles, which will become increasingly available as electric vehicle adoption rates increase in Vermont. Similarly, in 2021, the Massachusetts Institute of Technology calculated the full lifetime cost of almost every new car model on the market and found that electric cars often had the lowest costs over time.⁵¹ An analysis by Atlas Public Policy found that “total cost of owning the forthcoming electric version of the Ford F-150 (the F150 Lightning) is 17 percent lower than the gas-powered version, the cost of the electric Volkswagen ID.4, an SUV, is 15 percent less than the Honda CRV, a Tesla Model 3 costs almost 5 percent less than a similar Lexus, and the Chevy Bolt costs 6 percent less than a Toyota Corolla.”

Recently, the Inflation Reduction Act was signed into law, which extended the clean vehicle tax credit by lifting the vehicle sales cap, and implemented a new tax credit for the purchase of a used EV. Consumers will now be able to obtain a \$7,500 rebate at the time of purchase for a

⁴⁶ See Drive Electric Vermont, Cost of Ownership, <https://www.driveelectricvt.com/about-evs/cost-of-ownership>.

⁴⁷ Chris Harto, Consumer Reports, *Electric Vehicle Ownership Costs: Today's Electric Vehicles Offer Big Savings for Consumers*, 9 (Oct. 2020) <https://advocacy.consumerreports.org/wp-content/uploads/2020/10/EV-Ownership-Cost-Final-Report-1.pdf>.

⁴⁸ *Id.*

⁴⁹ Andrew Burnam *et al.*, Argonne National Lab for the U.S. Department of Energy, Office of Energy Efficiency and Renewable Energy (EERE), Transportation Office, Vehicle Technologies Office, Comprehensive Total Cost of Ownership Quantification for Vehicles with Different Size Classes and Powertrains (Apr. 2021), <https://doi.org/10.2172/1780970>.

⁵⁰ See *supra*, note 47.

⁵¹ Veronica Penney, *Electric Cars are Better for the Planet – and Often Your Budget, Too*, NEW YORK TIMES (Jan. 15, 2021), <https://www.nytimes.com/interactive/2021/01/15/climate/electric-car-cost.html>

new clean vehicle, and \$4,000 for a used clean vehicle. And many additional financial incentives exist specifically for Vermonters. State incentives can provide up to \$4,000 for a new electric vehicle, \$5,000 for a used electric vehicle, and an additional \$3,000 under the Replace Your Ride Program.⁵² Vermont electric utilities offer additional financial incentives under Tier 3 of the state's Renewable Energy Standard, with Burlington Electric Company offering up to \$2,900, Green Mountain Power offering up to \$2,500, VPPSA offering up to \$1,400, Stowe Electric Department offering up to \$1,200, Vermont Electric Coop offering up to \$750, and VSECU offering a .5% discount on electric vehicle financing rates.⁵³ Further financial incentives are also available for home and business charging equipment.⁵⁴ Altogether, existing federal, state, and utility incentives provide significant financial support to Vermonters purchasing new or used EVs.

VIII. *The ACC II Rule Ensures Strong Standards in Vermont, Regardless of Federal (In)Action*

During the Trump Administration, the National Program on GHG tailpipe emissions and fuel economy standards for passenger vehicles faced an unprecedented attack and rollback that Trump agency appointees called “the largest deregulatory initiative” of that administration.⁵⁵ The U.S. EPA, under the Biden Administration, reversed much of the damage to federal and state vehicle emissions programs for MY 2023 through 2026, and the National Highway Traffic Safety Administration updated fuel economy standards for MY 2024 through 2026 to reduce our nation's reliance on oil and to harmonize with EPA's program. While it is important for federal progress and collaboration to continue, foundational progress must be made at the state-level given the recent history of changing political winds at the federal-level.

The ACC II standards provide states with long-term certainty that their program will protect public health and the environment. States have the obligation and authority to ensure continued progress occurs on reducing greenhouse gasses and other toxic air pollutants. Providing long-term certainty to the industry and the public, as this proposed rule does, will be important today and in a future with potential federal inaction or backsliding.

IX. *Vermont Should Consider Additional Actions Relevant to the ACC II Rule*

The Agency should immediately begin developing and implementing programs that will be eligible for Environmental Justice (EJ) credits under the ACC II Rule. The Agency should also continue to develop and fund complementary policies and programs.

The ACC II standards include flexibility for additional EJ credits—which provides

⁵² See Drive Electric Vermont, Electric Vehicle Incentives, <https://www.driveelectricvt.com/incentives>.

⁵³ *Id.*

⁵⁴ *Id.*

⁵⁵ Press Release, U.S. Dept. of Transportation, *U.S. DOT & EP Put Safety and American Families First with Final Rule on Fuel Economy Standards* (March 31, 2020), <https://www.nhtsa.gov/press-releases/us-dot-and-epa-put-safety-and-american-families-first-final-rule-fuel-economy>.

manufacturers an incentive to voluntarily increase the number of low MSRP vehicles available, the number of EVs in community car share programs, and the number of EVs coming off lease and going to a disadvantaged community member. While these credit options are voluntary for automakers, to work towards an equitable transition to clean transportation, Vermont should ensure that programs that qualify for the EJ credits are in place. It is vital that Vermont work with environmental justice and community partners to develop and implement programs that are eligible to participate in the Environmental Justice flexibilities, while also developing complementary policies that ensure communities historically overburdened with transportation pollution realize the benefits of zero-emission transportation.

There is a short time frame for states to be able to develop these EJ programs, as automakers can start earning the credits in MY 2024. However, ensuring that all Vermonters, including historically overburdened and low-income communities with transportation pollution, have access to zero-emission vehicles is crucial. Therefore, Vermont should commit to immediately beginning work and engagement with community members and environmental justice organizations to develop and implement EJ programs that will be eligible for these programs.

Further, as there are only limited EJ provisions in the ACC II regulation, Vermont—as part of its engagement with community members and environmental justice organizations—must continue to develop and fund complementary policies and programs that will ensure the benefits of a transition to zero-emission vehicles are realized by all Vermonters, especially those who have been historically overburdened with transportation pollution, by building on the work done to stand up initiatives like MileageSmart, Replace Your Ride, and the multi-unit dwelling EVSE grant program.

ADVANCED CLEAN TRUCKS RULE

In 2020, CARB unanimously approved the ACT Rule. That rule's requirements gradually increase over time. They also vary across the different vehicle weight classes to reflect the pace at which technology is now, and will become, feasible. By MY 2035, zero-emission truck sales would need to be 55% of Class 2b – 3 truck sales, 75% of Class 4 – 8 truck sales, and 40% of truck tractor sales. The ACT Rule does not force Vermonters to purchase a zero-emission truck. It does not require Vermonters to sell their current fossil fuel truck. Nor does it prevent Vermonters from registering a new or used fossil fuel truck. Like the ACC II Rule, the ACT Rule regulates manufacturers.⁵⁶

Vermont is one of 17 states⁵⁷ that committed to zeroing out medium- and heavy-duty vehicle pollution no later than 2050 by signing the Multi-State Medium- and Heavy-Duty Vehicle Memorandum of Understanding (MOU).⁵⁸ In the MOU, Governor Phil Scott and the other

⁵⁶ See, e.g., Vermont Low and Zero Emission Vehicle Regulations, Proposed Filing (June 24, 2022).

⁵⁷ NESCAUM, *NESCAUM Welcomes Nevada's Participation in the Multi-State Zero-Emission Electric Trucks Initiative* (March 31, 2022), <https://www.nescaum.org/documents/nescaum-welcomes-nevada-s-participation-in-the-multi-state-zero-emission-electric-trucks-initiative/>.

⁵⁸ Multi-State Medium- and Heavy-Duty Vehicle Memorandum of Understanding, <https://www.energy.ca.gov/sites/default/files/2020-08/Multistate-Truck-ZEV-Governors-MOU->

signatory states identify ACT and the HDO Rules as key strategies for achieving the states' targets. As such, and as endorsed in Vermont's Climate Action Plan,⁵⁹ the Agency should adopt those rules by December 1, 2022, as required by Vermont's Global Warming Solutions Act.⁶⁰ If Vermont enacts those rules, the State could reduce climate damaging emissions by about 3.70 million metric tons by 2050,⁶¹ which would be a significant step for Vermont in achieving its mandated emissions reductions.

Since California approved ACT, New Jersey, Oregon, Washington, New York, and Massachusetts have all adopted the rule. Other states like Connecticut, Colorado, and Maine are in the process of adopting or considering adopting this rule.

I. The ACT Rule Reduces Toxic Air Pollution

The ACT Rule is essential to phasing out diesel trucks and buses, which have a disproportionate impact on NO_x and PM 2.5 emissions that cause significant human health injuries. Vermont has tens of thousands of medium- and heavy-duty vehicles registered in-state, most of which burn fuels that emit toxic air pollution. A recent International Council on Clean Transportation (ICCT) report found that the proposed rules could reduce Vermont's NO_x emissions by 8,190 short tons and PM_{2.5} emissions by 44 short tons by 2050.⁶² Such emissions reductions will help avoid deaths, hospital visits, and sick days in Vermont. Similar findings have been made on the regional level. A study in Southern New England shows that Class 2b - Class 8 vehicles make up only 6% of vehicles on the road but disproportionately contribute to 48% of NO_x and 41% of PM 2.5 emissions.⁶³ The registered trucks in Vermont likely have a similar disproportionate impact to the trucks studied in Southern New England.

II. The Agency Should Limit Early Action Credits to the Year Before ACT Enforcement

We ask the Agency to modify the early action credit program and to limit it to only one year before the rule is enforced. The ACT Rule was created to provide flexibility for manufacturers to meet the sales requirements through credit trading mechanisms and early action credits. However, we strongly support limiting early crediting to only one year and to have that year be right before the ACT Rule is enforced. This would minimize the potential negative impact early crediting could have on the rule's effectiveness and, as a result, its benefits. Manufacturers could

20200714_ADA.pdf.

⁵⁹ See Initial Vermont CAP at 253.

⁶⁰ See, e.g., 10 V.S.A. § 593(b); Act 153, Sec. 4.

⁶¹ International Council on Clean Transportation, *Benefits of adopting California medium- and heavy-duty vehicle regulations under Clean Air Act Section 177*, at 2 (Nov. 2021), <https://theicct.org/wp-content/uploads/2021/12/state-level-hdv-emissions-reg-FS-oct21.pdf>.

⁶² ICCT, *Update: Benefits of adopting California medium- and heavy-duty vehicle regulations under Clean Air Act Section 177* (Dec. 2021), <https://theicct.org/publication/state-level-hdv-emissions-reg-fs-dec21/>.

⁶³ Union of Concerned Scientists, *Southern New England Clean Trucks Report* (2021), <https://www.ucsusa.org/sites/default/files/2021-11/southern-ne-clean-trucks-report.pdf>.

bank early credits for actions that were already planned well before ACT implementation, and those credits could offset important requirements once the rule is enforced, thus disincentivizing manufacturers from increasing production and sales volumes for zero-emission trucks in the program's early years. We thus ask the Agency to modify the early action credit program and to limit it to only one year before the rule is enforced.

III. *The Agency Should Adopt a Fleet Reporting Requirement in 2023*

The ACT rule as passed by California and other states had a fleet reporting requirement. Although the fleet requirement is not under consideration in this rulemaking, we ask the Agency to adopt a fleet requirement in a subsequent 2023 rulemaking. Fleet reporting data are critical to tracking progress of fleet transition to zero-emission trucks, and they allow Vermont to identify areas with high rates of freight traffic and, consequently, diesel pollution, which allows Vermont to target clean transportation policies to the communities that need relief most. Fleet reporting will shed light on exploitative labor practices, such as misclassifying drivers as independent contractors. Misclassification is rampant in the trucking industry in other parts of the country, particularly in the drayage segment. Those trucks are also among the oldest and dirtiest vehicles on the road, and present excellent opportunities for zero-emission technology replacements given their short-haul, idling, and stop-and-go operations. Due to misclassification in other parts of the country, many drivers also lack financial resources to upgrade their equipment to reduce diesel pollution or buy a zero-emission truck. A fleet requirement will also help electric utilities make better informed investments today to acquire load that can support the charging infrastructure necessary for medium- and heavy-duty ZEVs in a least-cost manner that enhances load and transmission planning efforts and minimizes ratepayer costs.

IV. *The ACT Rule is Technologically Feasible and Will Save Vermonters Money*

As of December 2021, there are over 145 models of zero-emission trucks of all sizes from 30 manufacturers, including 24 heavy-duty truck models,⁶⁴ and by the end of 2022 there will be over 500 models of zero-emission trucks.⁶⁵ Current range capacity of zero-emission trucks meet or exceed miles driven for most truck routes, and zero-emission trucks have similar hauling capacity to their combustion counterparts. There are 42,723 registered Class 2b - Class 3 trucks in Vermont, and these vehicles represent a majority (67%) of all trucks registered and driven in Vermont.⁶⁶ These class segments have the most readily available zero-emission trucks and should be targeted immediately for zero-emission transition. For other class segments, the ACT Rule provides different requirements and flexibilities in line with technology projections and advancements to ensure that the requirements are feasible.

The ACT requirements are actually lower than commitments made by Volvo and Daimler, which

⁶⁴ CALSTART, *Drive to Zero's Zero-emission Technology Inventory (ZETI) Tool Version 7.0* (2022), <https://globaldrivetozero.org/tools/zero-emission-technology-inventory/>.

⁶⁵ EDF, *The opportunity for near-term electrification of medium- and heavy-duty vehicles* (May 2022), <https://blogs.edf.org/climate411/files/2022/05/FINAL-EDF-HD-ZEV-report-5.17.22.pdf>.

⁶⁶ Atlas Public Policy EV Hub, Automakers Dashboard: <https://www.atlasevhub.com/materials/automakers-dashboard>.

hold more than 70 percent of the total market share of class 7-8 trucks. Both of these companies have made international commitments to have all new truck sales be zero-emission by 2040,⁶⁷ while the ACT rule only extends through 2035 and requires fewer zero-emission truck sales. Navistar and Paccar make up the remaining market share of class 7-8 trucks and have made similar commitments.

Not only are manufacturers committed to producing more zero-emission trucks, companies and fleet operators across the country are buying them. There are over 140,000 pending orders for commercial zero emission trucks across the country, and more than 85 businesses and institutions have expressed their support for adoption of the rule across states, including several with operations or business interests in Vermont.⁶⁸ Green Mountain Power has committed to transitioning its entire fleet to electric vehicles: all cars by 2025, all light-duty trucks by 2028, and all heavy-duty field trucks soon thereafter.⁶⁹ Additionally, Walmart, which holds the largest class 8 truck fleet in the nation, committed in 2020 to electrifying their entire fleet by 2040.⁷⁰ And Amazon has committed to purchasing 100,000 zero-emission trucks by 2030.⁷¹

Zero-emission trucks will save fleets money as a result of savings from maintenance and fuel costs. Although the upfront capital costs are higher, most zero-emission truck applications will achieve cost parity with diesel trucks before 2030.⁷² Another study by Roush industries found that when considering upfront purchase price alone, by 2027 electric freight trucks and buses will be less expensive than their combustion engine counterparts in all categories except shuttle buses (which are already close to price parity).⁷³

V. The ACT Rule Guarantees Vermonters Access to the Global Truck Market

The global supply of zero-emission trucks is in high demand. That said, demand for internal combustion engine trucks predominates the market. Manufacturers as result, must make strategic

⁶⁷ Electrive, *Major truck makers pledge to go zero-emission by 2040* (Dec. 15, 2020),

<https://www.electrive.com/2020/12/15/major-truck-makers-pledge-to-go-zero-emission-by-2040/>.

⁶⁸ Ceres, *85+ Businesses Support State Adoption of the Advanced Clean Trucks (ACT) Rule* (Sept. 24, 2021), <https://sforce.co/3LSBDks>.

⁶⁹ Tiana Smith, *Green Mountain Power Walks the Walk When it Comes to EVs*, VT Digger (Sept. 27, 2022), <https://vtdigger.org/2022/09/27/tiana-smith-green-mountain-power-walks-the-walk-when-it-comes-to-evs/>.

⁷⁰ Greenbiz, *Walmart drives toward zero-emission goal for its entire fleet by 2040* (Sept. 23, 2020), <https://www.greenbiz.com/article/walmart-drives-toward-zero-emission-goal-its-entire-fleet-2040>.

⁷¹ Amazon, About, (last visited Sept. 29, 2022), <https://bit.ly/3dTm0wq>.

⁷² Global Drive to Zero, *New Data Tracks 26% Growth of Zero-Emission Truck and Bus Model Availability in Midst of Economic, Supply Chain Challenges* (March 9, 2022), <https://globaldrivetozero.org/2022/03/09/new-data-tracks-26-growth-of-zero-emission-truck-and-bus-model-availability-globally-in-midst-of-economic-supply-chain-challenges-3-9-22/>.

⁷³ Vishnu Nair, et al., *Technical Review of: Medium and Heavy-Duty Electrification Costs for MY 2027-2030* (Feb. 2, 2022), <https://bit.ly/3SNr5VN>.

decisions on both how to split their manufacturing capacity, and where to allocate the ZEVs that they make.

Thankfully, the ACT rule helps shape the market in multiple positive ways that benefit Vermont. First, by setting a floor on the required market share of ZEVs, it encourages manufacturers to increase the share of ZEVs that they make, thereby lowering global GHG emissions from the trucking industry. Second, should manufacturers underestimate ZEV demand, the regulation will force manufacturers to allocate limited production and sell these trucks to Vermont. For example, on the light-duty vehicle ZEV standards, a study found that states that had adopted California's light-duty ZEV program had higher EV inventory and stock compared with states that did not have such regulations. This rule is then critical to helping Vermont achieve its environmental quality goals by ensuring that the state can purchase these vehicles.⁷⁴ Increasing the market share of ZEVs will decrease noise and criteria air pollution, while reducing state fuel expenditures, and greatly improve the quality of life of Vermont's residents, while doing the state's part in combating the climate crisis.

LOW NOX HEAVY-DUTY OMNIBUS AND PHASE II GREENHOUSE GAS EMISSIONS RULES

The HDO rule strengthens NOx and PM emission standards for new fossil fuel trucks, introduces a new NOx standard for a low-load certification cycle, extends manufacturer warranties, and improves in-use testing to better align with actual vehicle operations and global standards. The HDO rule is expected to cut NOx emissions from heavy-duty vehicles by 75% below current standards beginning in 2024, and by 90% in 2027.⁷⁵ It is also expected to reduce secondary PM2.5 formation since NOx is a precursor to secondary PM2.5 formation.⁷⁶ In addition to cleaning up NOx, the proposed HDO rule formalizes PM pollution controls, and prevents backsliding by adopting a more stringent standard that aligns with current industry certifications. The Phase II Rule sets more stringent greenhouse gas emissions standards for medium- and heavy-duty engine, vehicle, and trailer manufacturers. It requires manufacturers to improve existing technologies or develop new technologies to meet the GHG emission standards. The HDO and Phase II Rules work with the ACT Rule to meaningfully reduce climate damaging emissions in Vermont by about 3.70 million metric tons by 2050.⁷⁷

While the ACT Rule works year-over-year to gradually increase the share of new zero-emissions truck sales, the HDO Rule curtails toxic air pollution from new diesel vehicles that will continue to be sold in the interim, and the Phase II Rule curtails greenhouse gas emissions. The ACT,

⁷⁴ Sierra Club, *A nationwide study of the electric vehicle shopping experience* (Nov. 2019), https://www.sierraclub.org/sites/www.sierraclub.org/files/program/documents/2153%20Rev%20Up%20Report%202019_3_web.pdf.

⁷⁵ CARB, Heavy-Duty Omnibus Regulation (last visited Sept. 29, 2022), <https://ww2.arb.ca.gov/rulemaking/2020/hdomnibuslownox>.

⁷⁶ Vt. Agency of Nat'l Resources, *Vermont Low and Zero Emission Vehicle Regulations, Proposed Filing* (June 24, 2022).

⁷⁷ International Council on Clean Transportation, *Benefits of adopting California medium- and heavy-duty vehicle regulations under Clean Air Act Section 177, 2* (Nov. 2021), <https://theicct.org/wp-content/uploads/2021/12/state-level-hdv-emissions-reg-FS-oct21.pdf>.

HDO, and Phase II Rules are three legs supporting the same stool: together, they will enable Vermont's long-term vision of a zero-emission medium- and heavy-duty fleet. Together, they will reduce toxic air pollution that harms human health and disproportionately impacts historically marginalized communities. And together the ACT, HDO, and Phase II Rules will meaningfully reduce Vermont's climate damaging emissions.

I. The HDO Rule is Technically Feasible and Cost-Effective

When developing the HDO Rule, CARB thoroughly evaluated the technical feasibility of the rule's emission standards in partnership with the Southwest Research Institute (SwRI), Manufacturers of Emission Controls Association, U.S. EPA, South Coast Air Quality Management District, and engine manufacturers. The testing convincingly demonstrated and modeled cost-effective solutions to meet both 2024 and 2027 standards.⁷⁸ Importantly, certification data shows that many manufacturers today certify well below current standards and nearly meet the 2024 requirements.⁷⁹ Moreover, several engine manufacturers have already committed to developing compliant MY 2024 engines and are actively making plans to meet the MY 2027 requirements.⁸⁰

CARB staff has demonstrated the technical feasibility of both the 2024 and 2027 proposed NOx standards through several years of extensive development and testing in partnership with SwRI.⁸¹ The development and testing, together with related work by manufacturers, show that the proposed 2024 standards can be met using a combination of improved engine calibration, the newest configuration of after-treatment devices, and urea injection. The 0.02 grams per brake horsepower-hour NOx standard proposed for MY 2027 and subsequent years can be achieved with further refinements to the aftertreatment, and well-established powertrain technologies, including cylinder deactivation – a technology widely used in passenger vehicles.⁸² Moreover, opposed-piston engine testing reduced NOx emissions below the MY 2027 requirement in a Peterbilt tractor using conventional downstream aftertreatment equipment.⁸³ A cost assessment showed that opposed-piston engines “cost 11 percent less than conventional engines of the same

⁷⁸ CARB, *Technological Feasibility of Proposed Standards*, [https://ww3.arb.ca.gov/regact/2020/hdomnibuslow NOx /appi.pdf](https://ww3.arb.ca.gov/regact/2020/hdomnibuslow%20NOx/appi.pdf).

⁷⁹ CARB, *Public Hearing to Consider the Proposed Heavy-Duty Engine and Vehicle Omnibus Regulation and Associated Amendments, Staff Report - Initial Statement of Reasons* (June 23, 2020), <https://ww3.arb.ca.gov/regact/2020/hdomnibuslownox/isor.pdf>

⁸⁰ CARB, *Responses to Comments on the Environmental Analysis for THE PROPOSED HEAVY-DUTY ENGINE AND VEHICLE OMNIBUS REGULATION AND ASSOCIATED AMENDMENTS*, [https://ww3.arb.ca.gov/regact/2020/hdomnibuslow NOx /res20-23attbrtc.pdf](https://ww3.arb.ca.gov/regact/2020/hdomnibuslow%20NOx/res20-23attbrtc.pdf).

⁸¹ *Id.* at ES-12

⁸² *Id.* at III-12 to III-27.

⁸³ Achates Power, *Achates Power Opposed-Piston Heavy-Duty Diesel Engine Demonstration Performance Results – Ultralow NOx without additional hardware* (Dec. 2022), <https://achatespower.com/wp-content/uploads/2020/12/Achates-Power-Opposed-Piston-Heavy-Duty-Diesel-Engine-Demonstration-Performance-Results-Ultralow-NOx-without-additional-hardware.pdf>.

power and torque” with substantially less NOx and CO2 emissions.⁸⁴

II. *The HDO Warranty and Lifetime Mileage Requirements Provide Strong Benefits*

The HDO rule also updates warranty and lifetime mileage requirements. Heavy-duty diesel engines last well beyond the current useful lifetime; an issue that extends to the warranty period, where the standard 100,000-mile warranty requirement is only a small fraction of the expected lifetime of the engine and is well behind typical manufacturer warranties and extended warranties of 250,000 and 500,000 miles.

The useful life is critical to ensure adequate testing such that emissions controls are functional for the life of the engine. The warranty period is even more important because it can minimize tampering or disrepair and can shift the cost of failures onto the manufacturer, rather than the driver. Repair costs and downtime can be a significant burden for drivers, and survey data have shown that there is a significant interest in coverage that better reflects the operational lifetime of the vehicle.⁸⁵ Nearly one-quarter of respondents in that study already opt for an extended warranty, with a substantial share of those respondents choosing warranties that exceed the current useful-life requirements of the engine. A majority of owner-operators suggested future warranty coverage should meet or exceed 500,000 miles, which is well above the current minimum. This is borne out in more recent analysis of the market, which shows that 85% of the market already opts for an extended warranty, with just about half of those users opting for warranty coverage of at least 500,000 miles.⁸⁶ The HDO Rule significantly increases both the warranty and useful life length, which increases the guaranteed mileage over which emissions controls will be active, including by reducing costs for operators to reduce levels of mal-maintenance.

The timeline set out by the HDO Rule does not present undue constraints. The NOx standards preceding the recent HDO rule, which largely mirrored the EPA standards, were some of the most technology-forcing emissions standards ever adopted—requiring the development of an entirely new catalyst, new particulate filters, and a system that had to track the amount of NOx in the tailpipe, an amount that varies greatly under different driving conditions and integration of an advanced and complex engine exhaust gas recirculation system. Those new technological elements all had to work in concert without significantly impacting fuel consumption. Despite these challenges, manufacturers were readily able to meet these standards in a timely manner. In contrast, “meeting the envisioned CARB 2024 targets would require very modest increases in technology complexity and costs.”⁸⁷ Thus, compliance can reasonably be achieved on the HDO

⁸⁴ *Id.* at 2.

⁸⁵ Kerschner, B., and D. Barker, CARB, *Survey and analysis of heavy-duty vehicle warranties in California* (Dec. 2017), <https://ww3.arb.ca.gov/regact/2018/hdwarranty18/apph.pdf>.

⁸⁶ CARB, *Staff Report on the Warranty Cost Study for 2022 and Subsequent Model Year Heavy-Duty Diesel Engines* (2022), https://ww2.arb.ca.gov/sites/default/files/2022-01/warranty_cost_study_final_report.pdf.

⁸⁷ International Council on Clean Transportation, *Estimated cost of diesel emissions-control technology to meet the future California low NOx standards in 2024 and 2027* (May 20, 2020), <https://theicct.org/publications/cost-emissions-control-ca-standards>.

Rule's timeline.

III. *It is Unlikely the Rules Will Incentivize Vermonters to Buy Dirtier Vehicles Now*

History demonstrates that pre-buying dirtier vehicles in response to, or anticipation of, earlier emissions standards did not occur. The “pre-buy in response to 2007 criteria pollutant standards [was found] to be approximately symmetric, short-lived, and small in volume relative to previous estimates” – indicating that fears of mass purchases of polluting vehicles before a new standard takes effect are unlikely to be realized.⁸⁸ The bottom line is that—rather than seeing fleets buy dirtier, ostensibly cheaper vehicles in a panic—there is no meaningful uptick in polluting purchases as a result of new standards. This makes sense. Fleets recognize the cost savings over time of cleaner vehicles and do not seem inclined to ignore those benefits, or to reap the marginally lower purchase price of more polluting vehicles in the interim.

CONCLUSION

The Agency has legal authority under 10 V.S.A. sections 567 and 558, and under section 177 of the U.S. Clean Air Act⁸⁹ to adopt the Rules, which are described in the Vermont Climate Action Plan as key ways to reduce transportation emissions and to meet the Global Warming Solutions Act's reduction requirements.⁹⁰ Under Vermont law, the Agency is required to adopt these Rules by December 1, 2022.⁹¹ Doing so is also good policy. As discussed, the urgency of the climate crisis and the ongoing public health harms inflicted on Vermonters weigh heavily in favor of adopting the ACC II, ACT, HDO, and Phase II Rules without delay. The Agency also has the authority to make several minor and common-sense adjustments to the Rules. Under ACC II, we urge the Agency to ensure that programs qualifying for EJ credits are quickly put in place, and that the Agency commits to immediately engaging with community members and environmental justice organizations to develop and implement eligible EJ programs. Under the ACT Rule, we urge the Agency to adjust early action credits to ensure that the sales requirements do not lose their effectiveness, and we urge the Agency to initiate a separate rulemaking in 2023 to adopt a fleet reporting requirement.

We thank you and the Agency for your hard work in preparing these regulations and shepherding them forward. We also look forward to collaborating with you and discussing the important and beneficial ways these Rules benefit Vermonters.

⁸⁸ Katherine Rittenhouse and Matthew Zaragoza-Watkins, *Strategic Response to Environmental Regulation: Evidence from U.S. Heavy-Duty Vehicle Air Pollution Regulations*, MIT CEEPR, 33 (2016).

⁸⁹ *Codified as* 42 U.S.C. § 7507.

⁹⁰ *See* 10 V.S.A. § 593(b); Act 153, Sec. 4; Initial Vermont CAP at 253.

⁹¹ *See id.*

Sincerely,

Robb Kidd
Vermont Conservation Program Manager
Sierra Club Vermont

Jordan Giaconia
Public Policy Manager
Vermont Businesses for Social Responsibility

Johanna Miller
Energy & Climate Program Director
Vermont Natural Resources Council

Lauren Hierl
Executive Director
Vermont Conservation Voters

Ben Edgerly Walsh
Climate & Energy Program Director
Vermont Public Interest Research Group

Ron McGarvey
President
Vermont Interfaith Power and Light

Chase Whiting
Staff Attorney, Clean Energy & Climate Change
Conservation Law Foundation

Andrea Marpillero-Colomina, PhD.
Sustainable Communities Program Director
GreenLatinos

Paulina Muratore
Transportation Campaign Manager
Union of Concerned Scientists

Joel Levin
Executive Director
Plug In America

Alissa Burger
Regional Policy Director
CALSTART

Patricio Portillo, Senior Advocate, Climate & Clean Energy
Kathy Harris, Clean Vehicles and Fuels Advocate
Natural Resources Defense Council

Dave Robba
Manager, State Policy
Ceres

Larissa Koehler, Director, Vehicle Electrification & Senior Attorney
Andy Su, Attorney, Clean Transportation
Environmental Defense Fund

From: [Brady Toensing](#)
To: [ANR - DEC Lev Zev](#)
Cc: [Stevens, Rachel](#)
Subject: Comments to Proposed Amendments to the Air Pollution Control Regulations, LEV and ZEV Regulations
Date: Thursday, September 29, 2022 1:28:34 PM
Attachments: [Letter comments to ANR from R.L. Vallee re proposed air pollution amendments to rules 09.29.2022 FINAL.pdf](#)

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

Subject attached. Please confirm receipt. Thank you.

Brady C. Toensing
diGenova & Toensing
1775 Eye Street NW
Suite 1150
Washington DC 20006
(m) 202.297.4245



diGENOVA & TOENSING, LLP
ATTORNEYS-AT-LAW

September 29, 2022

Via Email (anr.declevzev@vermont.gov)

Secretary Julie Moore
Vermont Agency of Natural Resources
Department of Environmental Conservation
1 National Life Drive, Davis 2
Montpelier, VT 05620-3901

Re: Comments to proposed Amendments to the Vermont Air Pollution Control Regulations, Low Emission Vehicle and Zero Emission Vehicle Regulations.

Dear Secretary Moore:

This firm represents R.L. Vallee, Inc., a Vermont company and significant buyer of Internal Combustion Engine (ICE) vehicles from Vermont auto and truck dealerships. These comments are submitted pursuant to 3 V.S.A. § 840 and concern the Vermont Low Emission Vehicle and Zero Emission Vehicle rules and other amendments to the Vermont Air Pollution Control regulations, which were recently proposed by the Vermont Agency of Natural Resources (ANR).

These proposed rules adopt California's Advanced Clean Cars II rules (ACC II), Advanced Clean Trucks, Low NOx Heavy-Duty Omnibus, and the Phase 2 Greenhouse Gas Rule. Under these amendments, through the use of manufacturer fleet requirements, Vermont will limit the sale of ICE vehicles in 2026 and ban entirely the delivery of any "new" ICE vehicles after 2034, which is just 12 years from now. Starting in 2035, Electric Vehicles (EVs) will effectively be the only new vehicles available for Vermonters to buy.¹

In violation of Vermont law, ANR has stated that public comments will not impact the proposed rules or be properly considered.

The Global Warming Solutions Act (GWSA) was passed by the Vermont Legislature on September 9, 2020. That law created the Climate Council, which was tasked with creating a Climate Action Plan (CAP), which it did in December 2021.² The CAP directed "the ANR to adopt these regulatory amendments in order to meet Vermont's required reductions in GHG from the transportation sector" as called for in the GWSA and to mirror implementation of California's implementation of ACC II.

¹ Vermont Agency of Natural Resources, *Proposed Draft Vermont Low Emission Vehicle and Zero Emission Vehicle Rules*, 40-106 at p.6, <https://bit.ly/3dUly2H>.

² Vermont State Comprehensive Energy Plan (CEP) 2022, <https://bit.ly/3dQi8fE>.

The Federal Clean Air Act (CAA) requires states to follow federal standards. Or, if it gets a valid waiver, a state is allowed to adopt California's standards, but only if the state adopts the California standards without any changes. By choosing the California standard, Vermont does not get the chance to weigh in on the details of the plan in any way or to amend the standard to make it fit its needs. Instead, it is required to follow lock-step with California, allowing California bureaucrats to dictate the details of these rules to Vermonters, regardless of fit or the input of our elected representatives. As with California, Vermont's emission goals for Greenhouse Gases (GHG) are unreachable without destroying its economy and creating other sources of pollution, thereby harming every Vermonter. By directing ANR to adopt these rules, Vermont's Climate Council has chosen to follow California into the abyss.

The Vermont General Assembly intended that "[a]gencies maximize the involvement of the public in the development of rules."³ Toward that end, during this rulemaking process, the law *requires* that ANR fully consider "all written and oral submissions concerning proposed rule[s]," which means that it must take those comments into account and adjust the rules accordingly.⁴ ANR, however, has said that these rule changes are a *fait accompli* and that public comment will not impact the rules or its decision to implement the changes. Public comment, according to a senior ANR official, is only intended to gather input from "Vermonters about what they feel they need to participate effectively in this transition to electric vehicles."⁵

Questions for ANR:

- *What is the purpose of this public comment period?*
- *Do any public comments have the ability to cause the ANR to consider alternative solutions or to change the proposed rules in any way? If so, how?*
- *If given the opportunity, would ANR amend California's Advanced Clean Cars II Rules in any way to better fit Vermont's particular needs, limitations, or goals?*

Electric Vehicles (EVs) do not perform well in Vermont.

If EVs are as good as ANR claims, then why do we need to ban gasoline vehicles and spend so much money subsidizing EVs? Last year, there were 3,400 registered light-duty EVs in Vermont, which is only about one-half of one percent of its nearly 600,000 registered light-duty vehicles.⁶ Studies indicate that those few households able to buy an EV are affluent, and that most back up their errand-running EVs with ICE

³ 3 VSA § 800 (1).

⁴ 3 V.S.A. § 840(d).

⁵ Kevin Gaines, *Will Vermont follow California's lead in EV revolution?*, WCAX, Aug. 26, 2022, <https://bit.ly/3UOvKZx>.

⁶ United States Department of Energy, *Vehicle Registration Counts by State, 2021*, <https://afdc.energy.gov/vehicle-registration>.

vehicles.⁷ Other rural, cold states have similarly low adoption rates. Alaska (1,300), North Dakota (400), South Dakota (700), and Wyoming (500) together have fewer than 3,000 registered EVs.⁸

The likely reason for these low numbers is that Vermont is not Southern California, and the reality is that EVs do not do well in the cold, which leads to their having large range reductions. Keeping the inside of an EV warm and defrosted in winter is an additional drain on an EV's range, especially when temperatures dip below 15 degrees Fahrenheit. Consumer Reports recommends, for those living in colder climates, buying a car with double the range they normally need in the summer.⁹ It also advises those drivers to keep their car in a garage and plugged in right up until the car is used. Apartment dwellers and most people while at work will be unable to follow this advice.

In addition to cold weather performance issues, EVs are ill-suited for purposes common in Vermont. Many Vermonters have light duty trucks for hauling trailers or firewood, but EVs fall short of being able to meet these types of demands, which are normal usage for typical ICE vehicles.¹⁰

Questions for ANR:

- *What are the technical and performance limitations of EVs in cold weather climates and will those limitations negatively impact Vermonters and their ability to travel during winter and to do so comfortably?*
- *Did ANR consider EV cold weather performance problems when it decided to propose these rules?*
- *Do the performance warranties under the California standard require EVs to perform at the same level in cold weather?*
- *Will cold weather performance problems increase the cost per mile for charging and using an EV and will those performance problems increase GHG emissions from the extra electricity needed to charge these EVs?*
- *What percentage of Vermonters have a garage and how will EVs perform in Vermont during cold weather for people who do not have garages at home or work?*

⁷ David Welch, *Electric Vehicles Are Out of Reach for Most U.S. Consumers*, Bloomberg, March 18, 2022, <https://bloom.bg/3BMQiiE>.

⁸ *Id.*

⁹ Patrick Olsen, *Buying an Electric Car for a Cold Climate? Double Down on Range*, Consumer Reports, February 13, 2019, <https://bit.ly/3dNbMoN>.

¹⁰ Dan Mihalascu, *Towing with Ford F-150 Lightning a "Total Disaster," Owner Finds*, InsideEvs, Sept. 26, 2022, <https://bit.ly/3SAdtoo>.

- “[T]he only alternative that ANR considered is not to amend Advanced Clean Cars or adopt Advanced Clean Trucks, the Low NOx HD Omnibus, or the Phase 2 Greenhouse Gas rules.”¹¹ Does that mean that ANR looked at no other options for reducing these pollutants, such as additional incentives for EV adoption that would be driven by consumer choice rather than government mandate? If so, why did ANR not even consider other options?
- ANR claims that if it chose not to implement these rules, Vermont will be “less likely” to receive EVs from manufacturers.¹² What is the basis for this claim? If it is a shortage of EVs, then won’t market forces drive up EV prices to even more prohibitive levels?
- What are the technical performance limitations for EVs used in hauling cargo, on board or by trailer, and how will those limitations effect Vermonters in their everyday use of light duty pick-up trucks?

Vermont’s electrical infrastructure is inadequate to meet the demands of the proposed rule, especially when coupled with the increased electrical demands that will be created by other proposed GHG rules.

Mandating EVs will require much more electrical power and significant improvements to the electrical grid that will take many hundreds of millions of dollars and many more years to achieve. According to Cadmus, the consulting firm hired by the Climate Council, there will be “significant growth in future demand” to meet new transportation and building electrification demands.¹³ The Cadmus report says that in less than twelve years, Vermont will need to find more than 60 percent more electricity than it currently uses in order to power these new electrical demands, including approximately 3,400 GWh for transportation alone, which represents nearly 40 percent of Vermont’s current total 5,500 GWh usage.¹⁴

Ironically, electric grid experts concerned about meeting the new demand that will come from banning fossil fuel burning vehicles are recommending fossil fuel to save the day. ISO New England is the nonprofit, independent overseer of New England’s bulk electric power system and transmission lines. It recently warned of the need to create a fossil fuel reserve to ensure the grid does not collapse under the weight of increased electrical demands caused by EV and electric heat mandates.¹⁵

¹¹ Vermont Agency of Natural Resources, *Supplemental Information for Advanced Clean Cars II*, at 16, <https://bit.ly/3LTME4N>.

¹² *Id.*

¹³ The Cadmus Group, *Vermont Pathways Analysis Report 2.0*, November 2, 2021, at 18, <https://bit.ly/3LPTsAB>.

¹⁴ *Id.*

¹⁵ Robert Walton, *ISO New England floats ‘energy reserve’ to ensure grid reliability, access to LNG at Everett terminal*, *Utility Dive*, Aug. 31, 2022, <https://bit.ly/3LTAjxJ>.

In its rulemaking material, ANR devotes a mere single paragraph to these unprecedented increases in electrical demands, claiming summarily that the Vermont Electric Power Company (VELCO) is making plans for the new load requirements.¹⁶ But VELCO is anything but confident that the electrical grid will be able to support this “unprecedented” level of growth, saying that it “*may* be able to serve or manage that load successfully provided we coordinate our planning efforts and implement the preferred solutions in a timely manner.”¹⁷ It warns that there is currently “no entity or group tasked to design and implement” the needed solutions. *Id.* at 8. One of those solutions is “load management,” which means that VELCO will need “direct utility control of” EV charging and the ability to disconnect “75% of the EV load” for hours during peak periods to prevent the system from failing to meet the reliability criteria during forecasted high load scenarios.¹⁸

This summer, in Colorado and California, during a heat wave that threatened their grids, utilities took over the thermostats of some customers and locked some of those thermostats above 80 degrees.¹⁹ California and the other states following its EV mandate will face impossible challenges. Even without the load of millions of new EVs, California cannot meet current electricity demands. California had rolling blackouts in 2020 soon after announcing its ICE ban. And, just a few weeks ago, California warned about more blackouts and told EV owners not to charge their cars during peak hours.²⁰

Vermont’s electrical grid is likewise not up to the task of meeting the demands of these unprecedented new burdens. When faced with an overloaded grid or to meet GHG emission goals, does anyone doubt that that “direct utility control” will not extend into all electricity usage, including thermostat control during cold spells?

Questions for ANR:

- *Has ANR identified the electricity generation sources for the additional electricity load growth that will be caused by these proposed rules? If so, please identify these sources by entity, location, fuel type, and anticipated supply to Vermont.*
- *Does the successful implementation of ANR’s proposed rule contemplate or require that utility companies or government have the ability to curtail or prevent the charging of EVs?*

¹⁶ Vermont ANR Supplement, *supra* note 11, at 11.

¹⁷ VELCO’s 2021 Long Range Plan, at 5 (emphasis added), <https://www.velco.com/our-work/planning/long-range-plan>.

¹⁸ *Id.* at 6.

¹⁹ John Antczak and Eugene Garcia, *Californians asked to conserve power amid brutal heat wave*, AP News, Sept. 2, 2022, <https://bit.ly/3Rl7f3d>.

²⁰ Livia Albeck-Ripka, *Amid Heat Wave, California Asks Electric Vehicle Owners to Limit Charging*, New York Times, Sept. 1, 2022, <https://nyti.ms/3RqDgqy>.

- *Will utility companies or government entities have the ability and authority to control the charging of EVs or any other electrical usage in Vermont homes, such as thermostat control?*
- *Does ANR anticipate that Vermont utilities or government entities will need to employ “load management,” such as preventing EV charging or controlling thermostats, to deal with increased electrical usage as a consequence of these proposed rules?*
- *Does ANR anticipate that there will be litigation brought to prevent any intra- or inter-state transmission line upgrades made necessary by these proposed rules?*

Dramatically increased demand will cause electricity prices to skyrocket.

Despite access to fossil fuel powered vehicles, Vermont is already contending with energy shortages. By banning the sale of ICE vehicles, the ANR is removing a large source of energy from the market and thereby needlessly manufacturing what will be an unprecedented energy crisis.

ANR’s proposed rule states that unprecedented increased demand will “drive[] down” electricity rates.²¹ Simple economics, however, dictate that the dramatically increased demands from these proposed rules will cause the cost of electricity to rise to prohibitive levels, making recent \$5 a gallon gas look cheap. In early September, when California narrowly avoided rotating outages for multiple days, prices surged to as much as 85 cents per kilowatt hour. In 2020, prices reached as much as \$1.31 per kWh and California imposed rotating outages.²² Countries like Norway that have widespread usage of EVs have seen skyrocketing electricity costs. Electricity there is expected to soon reach \$1 per kWh, which means it will cost about \$100 to fully charge a Tesla.²³

Questions for ANR:

- *Will ANR provide evidence that electricity prices will not rise? If not, will it concede that its electricity price predictions are pure speculation and that electricity prices could rise significantly due to increased demand as a result of these rules?*

²¹ Vermont ANR Supplement, *supra* note 11, at 14.

²² Reuters, *Sweltering California urges conservation as power demand nears record*, Sept. 7, 2022, <https://reut.rs/3v5J7L9>.

²³ Peter Imanuelsohn (@PeterSweden7), TWITTER (Aug. 28, 2022, 11:35 AM), <https://bit.ly/3BWxiIr>; Tucker Carlson, *California’s leaders know nothing about energy*, Fox News, Aug. 30, 2022, <https://fxn.ws/3SKrcBt>.

- *How would high electricity prices impact ANR's conclusions about the benefits and harms to Vermonters from these rules?*
- *Would any forecast of future increases in electricity prices, no matter how high, affect ANR's decision to implement these rules or its timing in any way?*

The electrical panels in most Vermont homes are incapable of hosting proper EV chargers.

Even if there is somehow enough electricity, Vermont's housing stock is much older than the country as a whole and more than half is incapable of hosting fast charging amperage.²⁴ Sixty percent of the houses in Vermont were built before 1980, which means those homes were built with 100-amp service or below. However, a Level-2 EV charger requires a home with 200-amp service, which means that sixty percent of Vermont homes will need their electrical service upgraded. Even if Vermonters are able to afford the minimum \$5,000 cost of an upgrade like this, good luck finding an electrician. According to the Vermont Department of Labor (and anyone who has tried to build or remodel a house lately), there is already a severe shortage of electricians in the state.²⁵

Assuming Vermont is able to conjure the necessary army of new electricians, it is estimated that the necessary 200-amp panel upgrades to allow car charging in Vermont homes will cost nearly \$700 million.²⁶ And none of these expenditures will help Vermonters who live in apartments and have to park on the street. Those people will have no place to charge their vehicles, except for public charging stations if those can be found nearby and are operational.

Questions for ANR:

- *Who will pay for service and panel upgrades?*
- *How will people find enough electricians to perform all these panel upgrades?*
- *How will people who live in apartments or in housing that requires them to park on the street charge their EVs?*

²⁴ Vermont Housing Finance Agency, *Vermont Housing Needs Assessment: 2020-2024*, February 2020, at 32, <https://bit.ly/3UOe6oF>.

²⁵ Vermont Department of Labor, *Vermont Declining and High Demand Occupations 2022*, at 8, <https://bit.ly/3E1vyjA>.

²⁶ Vermont Public Power Supply Authority, *Utility Infrastructure Investment Proposals*, January 14, 2022, at 7, <https://bit.ly/3BWOZra>.

Vermont intends to use “renewables,” some of which are dirtier than fossil fuels to reach climate goals.

Any discussion of the relative CO₂ contribution of energy sources must include the political sacred cow of Burlington’s Joseph C. McNeil woodfired generating plant. McNeil is operated by the Burlington Electric Department, which brags that its 50-megawatts of woody-biomass electricity generation comes completely from renewable sources. But that claim is disingenuous at best, because not only is McNeil Vermont’s largest producer of electricity, it is also its biggest emitter of GHG.

Compounding this pollution problem, the state also produces electricity by burning wood at the 20-megawatt Ryegate Power Station in Caledonia County, which is subsidized \$5 million every year by ratepayers.²⁷

ANR should not claim Vermont is helping the climate by burning biomass like trees, because it is making it worse.²⁸ And biomass is much worse than fossil fuel generation, especially natural gas.²⁹ McNeil operates at only 23 percent efficiency,³⁰ which is significantly less than coal (45%)³¹ and gas (>50%).³² In fact, climate expert Bill McKibben has a term for the inclusion of renewables like biomass to calculate a reduction in GHG emissions – Greenwashing. Vermont officials are well aware of the deceit of biomass. In 2014, the Vermont Public Utility Commission rejected a new biomass electricity plant proposed for North Springfield because of its low efficiency and negative environmental impacts.³³

Biomass electricity generation not only causes increased emissions and harms air quality, but it also depletes the region’s forests of carbon storage capability. Most climate experts now agree that burning trees creates a carbon debt that is not repaid for many decades, which is too late for addressing climate concerns.³⁴ Leaving aside the debate about the long-term carbon effects of the inefficient burning of wood to generate

²⁷ Kevin McCallum, *In a Warming World, New Thinking Imperils Vermont’s Wood-Fueled Energy Market*, SevenDays, Oct. 9, 2019, <https://bit.ly/3fiusFS>.

²⁸ James Reinl, *Old growth forests being stripped bare and the carbon in the wood is being released*. DailyMail.com, Sept. 15, 2022, <https://bit.ly/3dMGlIn>.

²⁹ U.S. Energy Information Administration, *How much carbon dioxide is produced per kilowatthour of U.S. electricity generation?*, WWW.EIA.GOV, <https://bit.ly/3rzRwDb> (last visited Sept. 28, 2022).

³⁰ McCallum, *supra* note 27.

³¹ General Electric, *High-Efficiency, Low Emissions Coal Plants*, WWW.GE.COM, March 13, 2018, <https://invent.ge/3CjccgO>.

³² International Petroleum Industry Environmental Conservation Association, *Combined cycle gas turbines*, WWW.IPIECA.ORG, April 10, 2013, <https://bit.ly/3SKrWqf>.

³³ McCallum, *supra* note 27.

³⁴ Bill McKibben, *Don’t Burn Trees to Fight Climate Change – Let them Grow*, The New Yorker, Aug. 15, 2019, <https://bit.ly/3RmIKmc>.

electricity,³⁵ we are told that we are in midst of a climate emergency that cannot wait for decades for a response. Assuming that is true, the most effective and dogmatically consistent action to take is to shut the McNeil plant down.

To illustrate this point, let's take something most Vermonters are very familiar with in our rural lifestyle – the F150 truck and its newest manifestation the F150 Lightning. The gas-powered F150 produces about .94 lbs (470 grams) of CO₂ per mile driven.³⁶ The new Lightning requires 1 Kilowatt-hour to travel 2 miles.³⁷ Electricity produced from an average coal plant produces about 2.23 lbs per kWh,³⁸ so for one mile the Lightning using coal-based electricity produces 1.12 lbs of carbon.

McNeil, however, does not burn relatively-efficient coal. Instead, it burns inefficient and wasteful wood, while destroying our woodlands. The well-respected Manomet study points out that a woody biomass facility produces 3.22 lbs of CO₂ per kWh versus 2.23 lbs of CO₂ from a coal fired plant.³⁹ That means the power produced by McNeil is 44 percent dirtier than power produced by a coal plant.

So a Lightning charged with power from McNeil produces 1.6 lbs of carbon per mile compared to just .94 lbs for a gas-powered F150. Put another way, the Lightning charged up at City Market produces over 70 percent more carbon than your Dad's Ford 150.

While the ANR may allow the greenwashing of its renewables portfolio to rack up phony GHG reductions, the law will not be so forgiving. Under 10 V.S.A. § 594, “any person” is given the power to bring suit against the State if its rules fail “to achieve the greenhouse gas emissions reductions requirements” of the GWSA. The use of McNeil and other biomass plants to claim falsely to reduce GHG in Vermont has already been publicly challenged by climate activists. Thus, the State should expect a lawsuit on this issue, especially since the law provides for payment of attorney's fees for a successful case.

Questions for ANR:

- *Why is Vermont using wood burning electrical plants to generate power (woody biomass electric generation) when it causes more GHG emissions than fossil fuels?*

³⁵ Meredith Somers, *Study warns wood bioenergy supporters can't see carbon emissions for the trees*, MIT Management Sloan School, Jan. 24, 2018, <https://bit.ly/3E6Xfrk>.

³⁶ 2018 Ford F-150, Fuel Economy, WWW.FUELECONOMY.GOV, <https://bit.ly/3fiaLOq>.

³⁷ 2022 Ford F-150 Lightning, Fuel Economy, <https://bit.ly/3res1qC>.

³⁸ U.S. Energy Information Administration, *supra* note 29.

³⁹ Manomet Center for Conservation Sciences, *Biomass Sustainability and Carbon Policy Study*, WWW.MANOMET.ORG, June 2010, at 103 (1.46 tonnes of CO₂ per MWh), <https://bit.ly/3dMt91O>.

- *If the McNeil and Ryegate plants are shut down due to GHG emissions, where does ANR anticipate replacing that lost electricity while also supplying the additional electricity needed for the increased demands caused by these proposed rules?*
- *Using the Ford F150 v. the Ford Lightning example, will ANR concede that an EV charged with power from the McNeil biomass plant causes more GHG emissions than an ICE vehicle driven the same distance, especially in temperatures below 20 degrees Fahrenheit?*
- *Did the ANR consider the impacts of burning wood in biomass plants on carbon sequestration, water quality, flood resiliency, recreation, and wildlife habitats? If so, what are those impacts?*
- *Did the ANR consider the impacts on carbon sequestration, water quality, and wildlife habitats of logging forests to feed biomass plants for producing electricity? If so, what are those impacts?*
- *What is the entire basis, including any scientific studies, for ANR's contention that these proposed rules will benefit public health? And, in particular, what diseases will be avoided and by whom?*
- *Did the claimed public health benefits account for pollutants from the McNeil and Ryegate plants? If so, how? If not, are these claimed benefits undermined by the pollution produced by these plants?*
- *Do the claimed cumulative avoided emissions of GHG, NOx, NOx, and PM from these proposed rules,⁴⁰ account for the pollution emitted from McNeil and Ryegate? Please explain how this pollution is or is not accounted for by these claims.*
- *Did ANR consider that these proposed rules may harm public health? If so, how and did that harm outweigh any forecasted benefit?*
- *How will the ANR defend against citizen lawsuits challenging its failure to reach GHG emission reduction requirements because its claims are based on the use of biomass electricity plants, which produce GHG gasses that exceed electricity generated with fossil fuels?*
- *Do Vermont's GHG emission calculations include GHG emissions used to generate power that is used in Vermont but produced out of state?*

⁴⁰ Vermont ANR Supplement, *supra* note 11, at 18-19.

The production of modern batteries for EV's harms the environment and is dependent on the Chinese-Communist government to supply rare minerals.

The production of batteries for EVs requires lots of minerals, such as lithium, cobalt, and nickel. More than 50 tons of ore must be mined to get enough minerals for each battery.⁴¹ That mining process involves massive machines that burn lots of fossil fuel to run, which will emit large amounts of GHG and other pollutants.

Making matters worse, many of these minerals are located in underdeveloped countries, making mining for these minerals both irresistible and ruinous to their people. These countries lack adequate environmental controls, have lax permitting and oversight, and have horrible human-rights records. For example, "most cobalt is dug out in Congo, where child labor is not uncommon, specifically in mining."⁴²

Another problem is that the supply chain for battery minerals is dominated by China, which means that the ability to have adequate supplies of batteries for both EVs and for the power storage called for by these rules will be largely dependent on its Communist government.⁴³

ANR's EV plan depends on lithium-ion battery site storage of electricity generated by solar and wind. However, recent incidents reveal that these batteries are prone to catch fire, posing both safety and environmental dangers.⁴⁴ A Tesla battery at a utility storage site in California caught fire this month, forcing a highway to be shut down and local residents to shelter in place.⁴⁵ "Lithium-ion battery fires are notoriously hard to extinguish because they burn at extremely high temperatures and produce dangerous fumes."⁴⁶ A fire last year in Australia at a Tesla battery storage site took "three days and a hazmat firefighting team to put out."⁴⁷ These safety and pollution factors should have been, but were not, considered by ANR.

Questions for ANR:

- *Did ANR consider China's market dominance over the minerals necessary to make EV batteries and the impact that dominance may have on the supply of batteries needed to implement these rules?*

⁴¹ Roger D. McGrath, *The Real Cost of Electric Vehicles*, Chronicles Magazine, July 1, 2022, <https://bit.ly/3rifxyi>.

⁴² Bjorn Lomborg, *Policies Pushing Electric Vehicles Show Why Few People Want One*, WSJ, Sept. 9, 2022, <https://on.wsj.com/3ftR2LW>.

⁴³ Camila Domonoske, *How a handful of metals could determine the future of the electric car industry*, NPR, March 13, 2022, <https://n.pr/3LVHZzE>.

⁴⁴ *California's Tesla Battery Fire, A reminder that solar and wind power aren't cost or risk free*, Sept. 21, 2022, <https://on.wsj.com/3ftwOSD>.

⁴⁵ *Id.*

⁴⁶ *Id.*

⁴⁷ *Id.*

- *Did the ANR's environmental impact assessment include environmental impacts outside of Vermont, including but not limited to water quality, air quality, and GHG emissions? In particular, did ANR consider environmental impacts, including GHG emissions, on areas of the world that will be burdened with extracting rare earth minerals needed for battery production?*
- *It is common in countries with the rare minerals needed for EV batteries to use child labor in mining. Did ANR include in any of its analysis or even consider that its EV mandate will exacerbate child labor problems in these underdeveloped countries?*
- *Did ANR consider that rare earth minerals needed for EV batteries are difficult to mine and that the increased demand caused by mandatory adoption of EVs may cause the cost of batteries to skyrocket to prohibitive levels, making the vehicles even less affordable to most of the public and eliminating any cost benefit of EV ownership anticipated by ANR.*
- *What are the potential safety and pollution hazards associated with battery storage sites, what are the costs of those hazards, and how will Vermont prepare for responding to highly-dangerous battery storage site fires? How much will it cost for Vermont's professional and volunteer firefighters to be trained and equipped to contend with these types of fires? Why did ANR not consider or include these factors in its assessment of these rules?*

Some countries have been exempted from the 2015 Paris Climate Accord's GHG emission reduction requirements, which will undermine any efforts to reduce GHG emissions elsewhere.

India and China are two of the biggest GHG emitters on the planet with huge industrial sectors and a combined population of 2.8 billion people. China releases more than 14 gigatonnes of GHG per year,⁴⁸ and India release about 3 gigatonnes per year.⁴⁹ Together these two countries emit 17 billion metric tons of carbon dioxide annually. Both China and India, however, have been exempted, along with other “developing countries,” from the 2015 Paris Climate Accord's GHG emission reduction requirements.

Vermont has a population of just 640,000 and releases only about 8.66 million metric tons of GHG per year.⁵⁰ China's and India's populations are 4,500 times larger

⁴⁸ *Greenhouse Gas Emissions by China*, Wikipedia, Aug. 23, 2022, https://en.wikipedia.org/wiki/Greenhouse_gas_emissions_by_China.

⁴⁹ *Climate Change in India*, Wikipedia, Sept. 22, 2022, https://en.wikipedia.org/wiki/Climate_change_in_India.

⁵⁰ *Vermont Greenhouse Gas Emissions Inventory and Forecast 1990-2017*, Vermont Dept. of Environmental Conservation, May 2021, <https://bit.ly/3riPoB2>.

and together they emit 2,000 times more GHG. Put another way, China and India emit as much GHG in under 5 hours as Vermont emits in an entire year.

Not only is China exempt from any GHG reduction requirements, but, in the six years since the accord was signed, China has increased its emissions by 11 percent.⁵¹ In other words, China is deliberately going backwards and accelerating its GHG emissions, more than swallowing up any reductions made by western countries. For example, since 2015, the United States has closed down 80 gigawatts of coal-powered electricity generation.⁵² In contrast, China is building and opening new coal plants at a furious pace.⁵³ According to the nonprofit Global Energy Monitor, China has built or will soon be building 290 gigawatts of coal-powered electricity capacity, adding back more than three times the capacity removed by the United States.⁵⁴

There is no guarantee that the communist government of China, which gave us COVID, fills our streets with Fentanyl, and commits genocide against its own people (the Muslim Uyghurs), will ever agree to any GHG reductions. Just doing the math, reasonable Vermonters might ask what is the point of all their economic pain, disruption, and uncertainty when the claimed and real reductions in GHG emissions will fail to achieve any of the proposed rules' stated purposes.

Questions for ANR:

- *In choosing to implement these rules, did ANR consider the impact of the exemption of developing country parties from GHG emission reductions on the effectiveness of these proposed rules in preventing or mitigating the impacts Global Climate Change?*
- *Even if Vermont shut down entirely all of its GHG emissions, there would be no mitigating impact on global climate change. Is there any scientific evidence supporting the idea that Vermont's EV mandate, which relies heavily on GHG emitting power stations, will have any material impact (or any impact whatsoever) on reducing worldwide GHG emissions or any mitigating impact on Global Climate Change?*

Litigation against the EPA, may disallow the California waiver upon which these rules are based.

All this effort and expense may be for naught depending on the outcome of litigation. Pending in the United States District Court for the District of Columbia is a case challenging California's waiver on the basis of the Administrative Procedures Act and the Constitutionality of allowing one state the special ability to carve out its own

⁵¹ Editorial, *China's Coal Power Boom*, Wall St. J., Sept. 13, 2022, <https://on.wsj.com/3Sq5GCK>.

⁵² *Id.*

⁵³ *Id.*

⁵⁴ *Id.*

exception to the Clean Air Act. *State of Ohio, et al. v. EPA, et al.*, Docket No. 22-1081 (D.C. Cir.). Even if this appellate court finds the California waiver is valid, that decision will be reviewable by the United States Supreme Court, which is receptive to arguments about constitutional structure and is increasingly skeptical of agency power. *See, e.g., West Virginia, et al. v. E.P.A.*, 142 S.Ct. 2587 (2022) (holding the EPA lacked authority to regulate emissions from existing power plants under the CAA).

Furthermore, analogous rules in other states have been challenged under applicable state administrative and constitutional law. For example, the Minnesota Automobile Dealers Association has a pending petition challenging the Minnesota Pollution Control Agency's final rules purporting to incorporate by reference the California Air Resource Board's standards. *See Minn. Auto. Dealers Ass'n v. Minn. Pollution Control Agency*, Case No. A22-0796 (Minn. Ct. App.). While an earlier challenge to the proposed rule had been dismissed as premature, petitioners have since re-filed their challenge to these rules as exceeding the statutory authority of the agency and as not authorized by the CAA. Thus, in addition to the federal petition filed by Ohio and other states in the D.C. Circuit, similar legal challenges have been made in other jurisdictions alleging serious deficiencies in these analogous rules. These courts will soon adjudicate these legal challenges on the merits, which may invalidate the basis for these proposed rules. Other states that have ceded their authority to California should expect similar lawsuits.

Questions for ANR:

- *Has ANR evaluated the legal claims made in litigation challenging the validity of the California exemption and made contingency plans to meet GHG emission requirements in case the exemption is found to be unconstitutional or invalid as arbitrary and capricious?*
- *Has ANR evaluated the vulnerability of its proposed rule to legal challenge?*

Conclusion.

Even if the exception that allows state government to force Vermonters to drive EVs is found to be legal, it is unwise policy. Vermont is not ready for EVs and will not be for some time. As Elon Musk, the genius visionary who enabled the production of modern EVs, recently remarked “[o]ne of the biggest challenges the world has ever faced is the transition to sustainable energy and a sustainable economy,” which he said “will take some decades to complete.” These proposed rules banning ICE vehicles show ANR is in denial of this reality, but it will be Vermont's citizens who suffer the consequences of this folly.

While we work in the coming decades to develop the technology to allow us to effectively and efficiently fuel electric vehicles with clean, renewable energy, Vermont needs to pursue an all of the above strategy by investing heavily in this technology while

Secretary Julie Moore
September 29, 2022
Page 15 of 15

still using cheap, reliable fossil fuels to alleviate poverty, propel its economy, and improve the well-being of its citizens.

Meantime, we look forward to your responses to these comments and to our specific questions.

Sincerely,

Brady C. Toensing
Counsel to R.L. Vallee, Inc.

cc: Rachel Stevens, Associate General Counsel, *via email* (Rachel.Stevens@vermont.gov)

From: [Sylvia Knight](#)
To: [O'Toole, Megan](#)
Subject: Comments: Advanced Clean Cars II & Advanced Clean Trucks rules.
Date: Friday, September 23, 2022 4:47:48 PM

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

Hello, Megan,

My husband and I own a 2022 Chevrolet Bolt and are enjoying it very much. We hope that more trucks will become electric. Large vehicles such as SUVs, vans and trucks still rule the road.

We need public transit buses to be powered electrically as well. Their stop & go patterns in town are perfect for electric power.

The challenge is finding enough charging locations to extend the range of travel. Please do all in your power to get VT off of petroleum for travel, or at least greatly reduced.

Thank you for your work,
Sylvia Knight
Earth Community Advocate & Researcher
Burlington, VT 05408
sknightinvt73@gmail.com
pronouns: she, her

We cannot solve our problems with the same thinking we used when we created them. Albert Einstein.

"We aren't going to have peace on Earth until we recognize the basic fact of the interrelated structure of all reality."

Martin Luther King, Jr.

From: [Rick Zimmerman](#)
To: [ANR - DEC Lev Zev](#)
Cc: ["Danielle Penny"](#); ["John Mitchell"](#); ["Kevin Kouri"](#); [Mike Thresher](#); [Sue VanAmburgh](#)
Subject: Comments: Advanced Clean Truck Rule
Date: Thursday, September 29, 2022 9:17:49 PM
Attachments: [Comments VT Advanced Clean Truck Rules.pdf](#)

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

Please accept the attached comments on behalf of the Northeast Agribusiness and Feed Alliance and the Vermont Feed Dealers and Manufacturers Association

Rick Zimmerman
Zimmerman and Associates
194 Washington Ave. Suite 610
Albany, NY 12210
P: 518 426 0214
C: 518 727 8156



Northeast
Agribusiness
& Feed Alliance



September 29, 2022

The Honorable Julie Moore, Secretary
Vermont Agency of Natural Resources
1 National Life Drive, Davis 2
Montpelier, VT 06520-3901

Via email: anr.declevzev@vermont.gov.

Cc: Deirdre.Ritzer@Vermont.gov, Air Quality and Climate Division, Mobile Sources Section

Re: Vermont proposed Advanced Clean Truck Rules

Dear Secretary Moore,

On behalf of the Northeast Agribusiness and Feed Alliance and the Vermont Feed Dealers and Manufacturers Association, we offer you the following comments regarding the proposed advanced clean truck rules that would incorporate by reference California's motor vehicle emission standard regulations and mandate. Our two trade associations represent the agribusinesses that serve Vermont's animal agriculture industry, including the dairy industry. Specifically, ANR proposes to amend existing rules by adopting California's Advanced Clean Cars II, Advanced Clean Trucks, Low NOx (oxides of nitrogen) Heavy-Duty Omnibus Regulations, and California's Phase 2 Greenhouse Gas ("GHG") Rule. This proposal promises to restrict consumer choice, and essentially force the use of heavy-duty electric vehicles onto the commercial truck industry before the technology has proven to be available, effective, economically competitive, and practically appropriate.

The dairy industry is the largest agricultural industry in Vermont, providing wholesome products to consumers throughout the country and offering good employment opportunities for Vermont residents. In addition, Dairy farms and agribusinesses provide the economy of VT with tax dollars critical for the operations of local and state municipalities. Vermont dairy farmers need daily deliveries of feed and grain to keep their animals producing and the notion of moving feed deliveries to an EV platform is currently unrealistic.

Feed trucks serving Vermont's dairy industry travel the length of the state And often reach west to New York, south into Massachusetts and Connecticut and east into New Hampshire and Maine. Vermont's feed manufacturing industry is essential to feeding dairy cattle and other essential livestock throughout New England and New York. Currently it is not uncommon for a feed delivery vehicle to travel 400 miles or more per day to pick up and deliver feed to dairy farms. Rural roads with many challenging hills require substantial horsepower from over-the-road tractors to accomplish the job. Further, engine power is required at the delivery site to operate the truck's unloading equipment.

State of the art heavy duty electric vehicle technology does not come close to performing the daily requirements of a feed truck, particularly in Vermont. Cold temperatures, hilly roads and onsite delivery demands will quickly reduce heavy duty truck performance to well below required performance rates. Further, recharging times, even if recharging infrastructure is available, would require hours per day to recharge in contrast to minutes per day for diesel refueling.

Vehicle cost is another significant factor. Current heavy-duty EV over the road tractors are running around \$400,000 each. A conventional diesel engine truck sells for about \$180,000. One Vermont feed business estimated that they would have to double the size of their fleet to accommodate the lower daily mileage performance and extensive recharge times. Charging takes between 8-10 hours and charging stations require expensive 3-phase power sources that cost as much as \$50,000. Further, even if it was possible for a fleet of heavy duty EVs to deliver feed commodities, the significant additional cost per vehicle cannot be absorbed by feed mills and dairy farms as farmers are price takers and cannot pass along additional expenses up the food chain.

The technology for large EV vehicles to replace diesel is still in the development stage, particularly regarding battery capacity. Currently, there are serious safety concerns relating to batteries in passenger cars. A large EV truck with tons of batteries poses a more serious threat that needs to be understood before mandating them onto the highway. EV passenger vehicles are not the same as large delivery trucks especially in the agricultural businesses.

The Northeast Agribusiness and Feed Alliance and the Vermont Feed Dealers and Manufacturers Association strongly recommends that policies pertaining to zero or low emission heavy duty commercial vehicles and agricultural equipment account for the practical applicability of current technology and avoid any direct or indirect mandates that force unproven economically unfeasible technologies upon Vermont's agriculture and food system.

Respectfully submitted,



Danielle Penny Stroop, President
Northeast Agribusiness and Feed Alliance
PO Box 1662
Latham, NY 12110
518 783 1322
Danielle.penney@novusint.com

Matt Saville, President
Vermont Feed Dealers
and Manufacturers Association
802-989-1631
president@vermontfeed.org

From: [Kara Evarts](#)
To: [O'Toole, Megan](#)
Subject: Comments: re Clean vehicle rules
Date: Thursday, September 29, 2022 7:36:48 AM

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

Ms. M. O'toole,

I am a Vt resident writing to support the Advanced Clean Cars II & Advanced Clean Truck rules initiative in Vt.

Vehicle emissions are the number one pollution contributor to our state's environment. I fully support the Advanced Clean Cars II & Advanced Clean Trucks to combat air pollution in our state.

Best,

KC EVARTS

From: [Katherine Walker](#)
To: [O'Toole, Megan](#)
Subject: Commitment to Zero Emission Vehicles
Date: Wednesday, September 28, 2022 4:46:45 PM

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

To Whom it May Concern,

I am firmly committed to Vermont's plan to reduce carbon emissions and hope that we stay on track by passing the Advanced Clean Cars II & Advanced Clean Trucks rules. Every state must make this effort, but in Vermont specifically, transportation is the single largest contributor to climate pollution.

We must redouble our efforts to reduce carbon emissions. Please let me know where you stand on this issue!

Thank you.

Katherine Walker
Waterbury Center, VT

Over the past weeks the Vermont Agency of Natural Resources has hosted hearings, both virtual and in-person, to hear from the public about this critical set of rules necessary to meet our state's climate goals. If you were able to make it to one of those hearings, thank you. If you could not make it to a hearing, **this is your chance to speak up.**

Transportation is the single largest contributor to climate pollution in Vermont, but Vermonters have struggled to find zero-emissions vehicles in sufficient numbers to meet demand. The passage of these rules is a critical step in our state's transition to a zero-emission future. **I hope you will take a moment to submit a comment advocating for the passage of the Advanced Clean Cars II & Advanced Clean Trucks rules.**

From: [Jon Kent](#)
To: [O'Toole, Megan](#)
Subject: Cutting emissions...
Date: Sunday, September 25, 2022 12:14:08 PM

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

It's a shame, as a Society, that we haven't taken Global Warming seriously and are on a path to our own demise. For a long time, I've felt that fossil fuels should only be for long hauling and construction, vehicles that call for hours of consecutive use. The day-to-day commute for the majority of us should be electric. While I'm at it, why shouldn't new housing include Solar in the equation? Thank you.

Jon Kent
Shelburne

From: [Brandy J Hill](#)
To: [O'Toole, Megan](#)
Subject: Electric Cars
Date: Thursday, September 29, 2022 7:21:52 AM

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

Hello,

I do not believe that going all electric is the way.

There is no infrastructure for electric cars here in VT and electric cars are no good for long travel.

The materials needed to make the batteries destroys the land and environment as well.

You need to have less cars all together. Money should be used for finding an alternative way to travel.

I really don't think electric cars are the total answer.

Sent from [Mail](#) for Windows

From: [Dana Barber](#)
To: [ANR - Vermont Climate Council](#)
Subject: electric vehicle proposal
Date: Friday, August 26, 2022 8:59:44 PM

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

I like the idea of electric vehicles but , as a snowbird traveling to and from Florida, range and charging time is most important to me. Also winter reliability and heating.

Dana

Sent from [Mail](#) for Windows

From: [Mike Doane](#)
To: [ANR - Vermont Climate Council](#)
Subject: Electric vehicles
Date: Saturday, August 27, 2022 7:34:40 AM

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

I have questions about going to all electric vehicles, but not going to travel 2 hrs each way to attend your meeting.

Has anyone given serious thought about how an electric plow truck will be able to keep up with a snow storm here in Vermont that might last a couple days? Do we keep a couple extra on chargers so when one dies we can switch to another? What happens when the storm knocks out the power? Now we have to keep generators on hand to power our plow trucks?

Don't get me wrong, I think in some places electric vehicles will work well, but to mandate all vehicles must be zero emissions in a rural state like Vermont, you should consider all of the possible repercussions. It goes way beyond just plow trucks. Service trucks such as our electric grid service trucks that work for 24-48 hours straight after storms repairing damages can't stop to recharge. Over the road truckers have to stop every few hours to recharge?

This summer here in Vermont, we were asked to not use our air conditioners in our homes so our electric grid wouldn't be overloaded. Now you want to make all vehicles electric. How is it possible to do that without overloading our grid?

Sent from my iPhone

From: [R.U](#)
To: [ANR - DEC Lev Zev](#)
Subject: Electric Vehicles Public Comment
Date: Friday, September 16, 2022 6:43:37 PM

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

I am submitting as my public comment on the **Proposed Amendments to the Air Pollution Control Regulations, Low Emission Vehicle and Zero Emission Vehicle Regulations.**

I have nothing against electric vehicles but am concerned that regulations that mandate such vehicles not be put in place without the supporting infrastructure first being in place. Or at a minimum that any new regulations include clauses that tie the implementation timing to such infrastructure also being in place.

Before I purchase an electric vehicle I want publicly available charging stations to be as readily accessible as are gas stations currently, and not just in terms of locations, but also in terms of capacity. It will be tough enough taking 30 - 60 minutes to charge a vehicle without first having to wait in line to get to an available station. There are exceedingly few charging stations out there at present, not just in Vermont, but just about everywhere. Charging at home only works if you only drive locally. I don't which is the basis for my concern. Assumptions that the supporting infrastructure is going to somehow appear call to mind the old maxim "hope is not a plan". An actionable charging station infrastructure plan needs to be at the forefront of any regulatory effort that forces a societal conversion to electric vehicles.

Thank you for any consideration that you give to my concerns.

Robert Underhill
Clarendon, VT

From: [Donald Lenz](#)
To: [O'Toole, Megan](#)
Subject: Electric vehicles
Date: Friday, September 23, 2022 4:18:13 PM

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

I support a law to to eliminate sale of new gasoline powered vehicles by 2035. This is absolutely necessary for meeting climate goals that have already been set.

From: achalnick@gmail.com
To: [O'Toole, Megan](#)
Subject: Electric Vehicles
Date: Monday, September 19, 2022 7:05:24 PM

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

I am writing to voice my strong support for adopting California's rule to transition away from fossil fuel-based transportation and require all new vehicles that are sold in Vermont to be electric, beginning 2035. The latest scientific reports warn that without immediate concerted action coral reefs will disappear, coastal cities will flood, drought will deplete the breadbaskets that today feed the world and ecosystems will fail. The Working Group II Co-Chair of the Intergovernmental Panel on Climate Change remarked:

"Climate change is a threat to human well-being and planetary health. Any further delay in concerted anticipatory global action on adaptation and mitigation will miss a brief and rapidly closing window of opportunity to secure a livable and sustainable future for all."

We must transition away from fossil fuels to have a livable future.

Thank you,

Andrew Chalnick

From: [Amy Lilly](#)
To: [O'Toole, Megan](#)
Subject: Electric vehicles
Date: Friday, September 23, 2022 5:00:16 PM

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

Hi!

On behalf of VPIRG, of COURSE access to electric vehicles in Vermont needs to be expanded, by any means necessary!

Thank you.

Amy

From: [sue_pfaff](#)
To: [O'Toole, Megan](#)
Subject: electric vehicles
Date: Wednesday, September 28, 2022 4:51:40 PM

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

I totally support electric vehicles AND

1. re-charging stations have to be plentiful, equitably placed, financially reasonable and ready to go.
2. rebates should not be in the form of a tax refund and must be substantial [not all people are rich enough to owe taxes].
3. electric vehicles must be practical for Vermont winter weather - function well and with any expensive parts i.e. expensive batteries - positioned away and protected from road salt or rough road damage.

Sue Pfaff
East Dover, Vermont
05341

From: [Jenifer Andrews](#)
To: [O'Toole, Megan](#)
Subject: Electric vehicles
Date: Wednesday, September 28, 2022 4:40:13 PM

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

Dear Megan,

I am writing to support continued forward motion in the area of electric cars. One of the things that is critical is hook ups. Before anyone can purchase an electric vehicle, they need to know that hook ups are easily available throughout the state.

We support the Advance Clean Cars proposal.

Jenifer Andrews
80 Vanasse Rd
Morristown, Vt 05661

From: [laura richardson](#)
To: [O'Toole, Megan](#)
Subject: electric vehicles
Date: Saturday, September 24, 2022 9:47:20 AM

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

pushing the use of electric vehicles as a solution to climate change is a farce! the manufacture of these batteries is petroleum based and they are toxic. we need a petroleum alternative, hemp for instance. even using veg oil instead of diesel is a better option. this idea is like using a bandage on a severed artery!

From: [Tom Button](#)
To: [ANR - Vermont Climate Council](#)
Subject: Ev cars
Date: Friday, August 26, 2022 10:52:42 PM

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

The government is going out his way to make sure that peoe wont be able to work here in Vt. You wanna get rid of gas power cars, How bout the people who cant afford to buy brand new Ev cars. Can barely afford gas power cars. You wanna add all this electric to a grid that cant handle it, so that the electric bills that are already so expensive people having hard time paying them. Not every county has buses like nek where people have to travel an hour to go to work cause there is no gd paying jobs that people have to afford the food or rent around this state. There is nothing here and yet we are one of the most expensive states to live in. Is the state gonna pay to get people who dont have or can afford to get Ev cars and pay to have the charger installed in there home.

Thank you,

Thomas Button

From: [Matthew Stone](#)
To: [O'Toole, Megan](#)
Subject: EV Vt
Date: Saturday, September 24, 2022 6:58:37 PM

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

Have you been paying any attention to what is going on in Vermont. have you noticed the number of EV's, PHEV's and hybrids on our roads? Maybe your efforts should be put into charging stations and alternative fuels. I hope you do not really believe that electric is the final solution.

From: [Rick McDowell](#)
To: [O'Toole, Megan](#)
Subject: EV's
Date: Wednesday, September 28, 2022 5:36:10 PM

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

Hi Megan

I'm writing in support of accessibility of EV's and any legislation that promotes clean energy transportation. It's long overdue

thanks

Rick

From: [Brian Just](#)
To: [O'Toole, Megan](#)
Subject: Feedback on Advanced Clean Cars II & Advanced Clean Trucks
Date: Thursday, September 29, 2022 10:29:25 AM

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

Good morning,

The Advanced Clean Cars II & Advanced Clean Trucks rules are a critical step in helping our little state create more impact. It is refreshing to hear that we could soon have expanded access to zero-emission vehicles, and I hope that Vermont resists the fossil fuel lobby and passes these.

This is especially important in a largely rural state that has so much transportation reliance. With the current infrastructure being built out, we'll be ready -- if the vehicles come. Rules like this will also help accelerate the production of affordable versions that will make these vehicles attainable (and sooner) by more Vermonters. This is critical.

Thank you for listening,
Brian Just

From: hanson70973@aol.com
To: [ANR - Vermont Climate Council](#)
Subject: Feedback on CAP recommendations
Date: Friday, August 26, 2022 10:18:28 PM

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

Re:WCAX report on CAP Recommendations EV mandates

No. No. No.

Not in favor of these policies. About as well thought out as a fifth grader could be expected to produce a plan like this.

Vermont is not California. California is failing.

Our grid is failing.

Ability to produce electricity with other sources of clean energy options has been nixed. Look at Germany.

This will end up hurting low and middle income residents and any subsidies and hidden taxes that will be added and buried in

our electric bills and in an EV sticker price will financially decimate these populations.

This will fail due to your lack of extremely poor planning and reckless roll out. Unfortunately, there will be a hefty price to pay from those who can least afford it..per usual.

Power grab and following the money.

Mary Hanson
White River Jct

From: [brian harms](#)
To: [ANR - DEC Lev Zev](#)
Subject: follow up from Zoom meeting today
Date: Friday, September 23, 2022 2:20:36 PM

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

As follow up to the presentation and comments/questions from those attending I still have some concerns though generally support the approach to the transportation sector input on emissions.

1) There are many ways we pollute besides the largest VT contribution in transportation. While reducing actual emissions from the largest source is technically the right thing to do, how an initiative is executed can have a negative impact on perception. The more fortunate of Vermonters can motor around Lake Champlain in a fossil fuel powered boat, yet the poorest among us with a minimum wage of \$12.33, now will be facing higher costs to reduce the very pollution the yachting crowd can continue to belch out. This affects the credibility of activism and can lead to less support in the future for other initiatives. Please do not lecture the poor on the economics of "cost per year of operation". When you are trying to figure out how to pay rent and buy groceries, the long-term financial benefits mean nothing. Pay wages on which people can thrive instead of surviving and then long-term thinking has a chance.

2) There needs to be a way to keep electric costs in check or better subsidized for the poor. If GMP and the other utilities have to buy more renewables, which they will for the overall transition to electricity, the costs for electricity will go up. Here the poorest, even without an EV, are paying more to power up the more fortunate of us to charge our fancy new EVs. This should be addressed in the initiative.

3) If the expansion and availability of charging is not keeping pace with the increase in EVs then the 100% date of 2035 should be adjusted. There should be an independent study on a continuing basis to be sure, not just that highways and large workplaces are charger ready, but the side streets of Burlington for the low wage worker in a basement apartment or the trailer on a rural road.

thanks

brian harms
Colchester, VT

From: [Linda McGinnis](#)
To: [O'Toole, Megan](#)
Subject: For Secretary Moore in support of ACT and ACC-II
Date: Wednesday, September 28, 2022 10:42:43 AM

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

Dear Secretary Moore,

I would like to add my name to the thousands of others who are urging the State to adopt the rules for the Advanced Clean Trucks (ACT), Advanced Clean Cars (ACC) II, Low NOx Heavy-Duty Omnibus, and the Phase II Greenhouse Gas Emissions Standards rules (the "Rules"). These rules are a win-win at nearly every level for Vermonters: public health, affordability, availability of zero emissions vehicles, and meeting our climate change requirements.

As a climate economist and policy analyst for over 30 years, both internationally and here in Vermont, I can say without a doubt that this set of regulations is the single most important act that the State can do at this stage to move Vermont to a future that prioritizes clean air for everyone together with clean affordable transportation.

As a mom of three, one of whom has breathing challenges, I am deeply concerned about our State's role in reducing pollution at ALL levels. And not a day goes by when I don't feel like we could be doing more to address climate change. Not a day.

Given that transportation is the largest source of emissions in Vermont (40%!), the highest share of energy burden for those who can least afford it (thanks to high and volatile fossil fuel costs), and is the sector on which the state has done the least at a policy level to transition to cleaner options (thanks in large part to the stalling of TCI-P), it is clear that this set of rules plays a critical role in both reducing emissions pollution AND in reducing transportation costs for those who can least afford it.

I have owned an EV for 6 years, and can attest to the significant savings we have seen in our transportation expenditures over the past 6 years. I want EVERY Vermonter to have those savings. I'd much rather spend those savings on health care, education, or pizza for that matter, than on gas that is imported from out of state, and is vulnerable to global wars, both in terms of price and supply.

As the Inflation Reduction Act comes online, the demand for electric vehicles is going to soar, and we need to ensure that the supply of vehicles in Vermont can meet that demand. These rules will enable Vermont to be part of the 15+ other states (and nearly EVERY vehicle manufacturer) who will be ensuring that our citizens can help lead this effort to a clean, affordable transportation future nationwide.

Please do not let Vermont miss this opportunity. This climate economist, this mom, this Vermont citizen is asking you to do the right thing...by ALL of us.

Respectfully,

Linda McGinnis

--

Linda McGinnis
2 Whately Rd
South Burlington, VT 05403
(Mobile) 802-324-6993

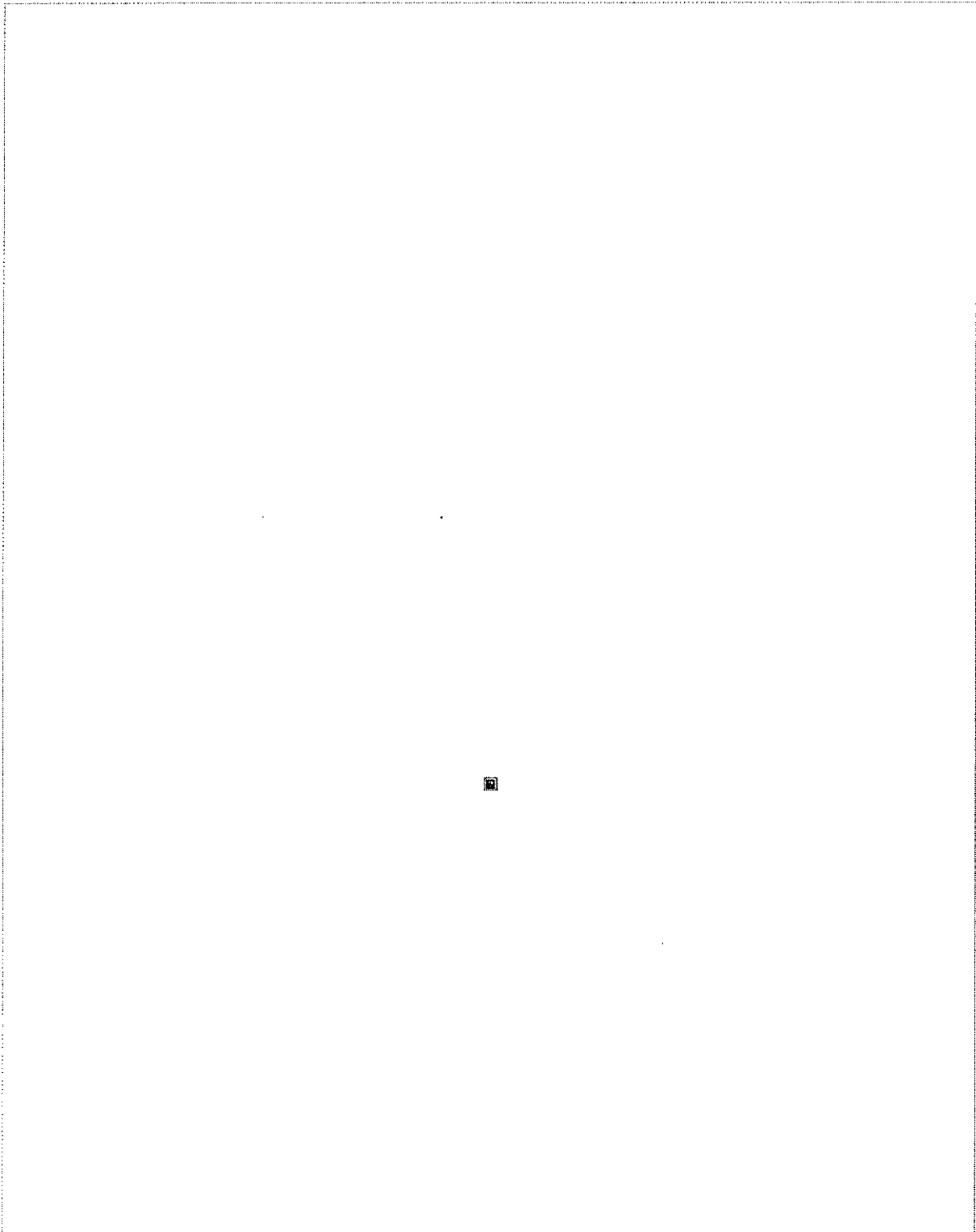
From: Charles Ferry
To: AHR - Vermont Climate Council
Cc: Charles Ferry
Subject: From Charles Ferry FW: Portland Press-Herald - 8/29/2022: "Maine's Not Rushing to Follow California's Electric Car Mandate"
Date: Wednesday, August 31, 2022 8:08:14 AM
Attachments: image_8481327.JPG

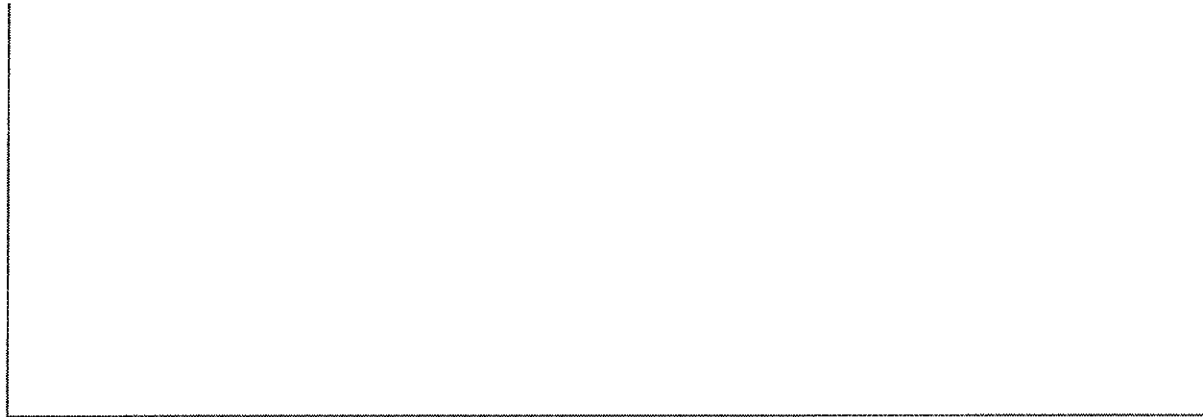
EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

I oppose the VT Climate Action Plan. People should buy and use what they want. Your proposed requirement will be costly for Vermont residents.

Charles Ferry
263 Berlin Street,
Montpelier, VT 05602

Subject: Re: Portland Press-Herald - 8/29/2022: "Maine's Not Rushing to Follow California's Electric Car Mandate"





On Wed, Aug 31, 2022 at 6:57 AM John Dunleavy <jdunleavy@icloud.com> wrote:

Sounds like Maine's governor is exercising some common sense.

<https://www.pressherald.com/2022/08/29/maines-not-rushing-to-follow-californias-electric-car-mandate/>

Shared via the Google app

Sent from my iPad

Sent from my iPad

—
Sent from Gmail Mobile

From: [Lori Wilson](#)
To: [O'Toole, Megan](#)
Subject: Fuel emissions
Date: Wednesday, September 28, 2022 4:10:28 PM

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

I do not think zero fuel emissions is realistic. I DO think the batteries the run electric vehicles pose a grave risk to the environment in the future. Especially if some of them end up in Lake Champlain after exploding, which happened already. Pushing forward blindly is risking the same kind of disastrous consequences that followed good intentions when we sprayed DDT, or when we opened fish hatcheries. The latter is wiping out wild salmon. Clean air is a great goal, but zero emissions is saddled with serious consequences for our environment and health. I think a balance is healthier. Very low emissions - excellent mileage for example - like hybrid cars offer. Running on used cooking oil, which is a great recycle approach, and was invented by a UVM student a couple of decades ago. Studying what role plants have in recycling carbon dioxide. Think. Stop and think. Don't just run blindly after a catchy phrase like zero emissions because it sounds dreamy and is popular in among your friends. Think. Study other approaches. Pay very close attention to consequences. There will be environmental consequences. I guarantee it, if zero emissions is pursued. A multi-branched approach towards very low emissions and plant control of that low amount makes sense. I'm all for lower emissions. That would be good.

Sent from my iPhone

From: [Hales, Heidi](#)
To: [Ritzer, Deirdra](#); [O'Toole, Megan](#)
Cc: [Stevens, Rachel](#)
Subject: FW: Website Feedback Form Submission
Date: Monday, August 29, 2022 9:05:39 AM

Hi Team,

See below for a comment on our upcoming rulemaking.

Heidi Hales, PhD | Director (she/her)
Vermont Agency of Natural Resources | Department of Environmental Conservation
Air Quality and Climate Division
1 National Life Drive, Davis 4 | Montpelier, VT 05620-3901
802-498-7338
heidi.hales@vermont.gov

-----Original Message-----

From: Marshall, Renita <Renita.Marshall@vermont.gov>
Sent: Monday, August 29, 2022 7:46 AM
To: Hales, Heidi <Heidi.Hales@vermont.gov>
Subject: FW: Website Feedback Form Submission

Could you please ask appropriate staff to just acknowledge receipt of this message to Jeffrey Swift. Thank you.

Submitted on Friday, August 26, 2022 - 7:06pm

Submitted values are:

Your Name: Jeffrey Swift
Your Email: swift.jeff1972@gmail.com
Subject: Hybrid and electric vehicles

Message: I don't understand why the state of Vermont always has to do the same thing California does. I will not own now or ever, a hybrid/ electric vehicle. A normal person who works on his own car, can't anymore. The ones that do, do so, because they can't afford dealership costs. A hybrid/electric vehicle isn't maintained or repaired the same as regular cars, so the cost is ridiculously more. And I don't care what the manufacturers say, the distance and reliability isn't there, of course they will tell us all that it is, they need to sell their products. There's a giant industry revolving around the automobile, makes a lot of sense to destroy it, and maybe that's not the intention, but that's what's going to happen, costing millions of jobs, and I'm sure, the meat market of the U.S. economy. You guys, the departments, the organizations, and especially the politicians, need to go out and talk to the real regular people, the taxpayers, the ones who pay your salaries, the ones you work for, and find out what they want. Their concerns, their arguments, because it seems to me there is a lot of us being ignored. If anyone actually reads this and thinks maybe I've possibly hit on something and brought up legitimate concerns and or believable arguments, thank you.

The results of this submission may be viewed at:
<https://dec.vermont.gov/node/3446/submission/7705>

From: [Susannah McCandless](#)
To: [O'Toole, Megan](#)
Subject: Fwd: Six public comments on the EV rule
Date: Wednesday, September 28, 2022 9:42:03 AM
Attachments: [EV rule comment Sheema Fahim.pdf](#)
[EV rule comment Afaf Abd Allah.pdf](#)
[EV rule comment Aya Altaani.pdf](#)
[EV rule comment Mike Zaazhqa.pdf](#)
[EV rule comment Mohamad Elkawas.pdf](#)
[EV rule comment Elvira Konjuhovac.pdf](#)

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

Dear Megan O'Toole,

Forwarding these important community member comments on the proposed EV rule to you to make sure they reach their necessary destination!

Best,
Susannah

Susannah R. McCandless, PhD
Special Projects Manager
Center for Whole Communities

P.O. Box 5483

Burlington, VT 05402

www.wholecommunities.org

c. 802-373-5996

o. 802-496-5690

pronouns – she, her

----- Forwarded message -----

From: **Susannah McCandless** <susannah@wholecommunities.org>
Date: Tue, Sep 27, 2022 at 4:08 PM
Subject: Six public comments on the EV rule
To: <anr.declevez@vermont.gov>
Cc: <rachel.stevens@vermont.gov>, Mona Tolba <mtolba7@gmail.com>, Jennifer Byrne <jbyrne@vermontlaw.edu>, Britaney Watson <britaney@wholecommunities.org>, Ginny McGinn <ginn@wholecommunities.org>, Michael Weiss <michael@radvt.org>, Hayley Jones <hayley@slingshotaction.org>

To whom it may concern,

I am pleased to present six important individual comments on the EV rule, from members of the New

American community. The commenters are primary-language speakers of Arabic and, in one instance, Serbian. Community liaison and cultural broker Dr. Mona Tolba has been kind enough to model Title VI compliance, facilitating language access for the commenters' intended audience by providing translations of their letters into English.

We will follow this email by mailing in the original hard copies of each 3-page packet, containing the letter, handwritten additional personal comment, and the letter's translation. We wanted to make sure these comments were received timely.

Please confirm successful receipt of these attachments.

Warm regards,

Susannah R. McCandless, PhD
Special Projects Manager
Center for Whole Communities

P.O. Box 5483

Burlington, VT 05402

www.wholecommunities.org

c. 802-373-5996

o. 802-496-5690

pronouns – she, her

Rule: https://dec.vermont.gov/sites/dec/files/aqc/mobile-sources/documents/Proposed_Rule_Summary_Document.pdf

Submit comment by email to: air@dec.vermont.gov

تحية طيبة

أنا اسمي نعضاً من غير المرعي الجوار وأنا مقيم في ولاية فيرمونت وعضو في مجتمع العرب الكاننين في مقاطعة الشيتيندين. أقدم هذا التعليق الرسمي على بعض القواعد الصادرة في ولاية فيرمونت والتي تحكم المركبات الكهربائية منخفضة الانبعاثات والمركبات ذو الانبعاثات الصفرية قاعدة رقم P02122. لن تساعد برامج حوافز المركبات الكهربائية العائلات التي ليس لديها ما يكفي من المال للطعام أو السكن الأمن أو تكاليف الطاقة. لا يمكن الحصول على هذه السيارات الكهربائية من قبل المجتمعات الأمريكية الجدد والمجتمعات ذات الدخل المنخفض بسبب ارتفاع تكاليف الشراء، ولا ينبغي اعتبارها "منفعة بيئية" لمجتمعنا. يعمل أعضاء مجتمعنا بجد لدفع الفواتير المطلوبة مئة، لكننا لا نحصل على نفس الفرص التي تؤدي لبيئة نظيفة وتكاليف نقل أقل مثل بقية الأثرياء الكاننين في فيرمونت.

تدعي هذه القواعد أنها توفر فوائد اقتصادية وصحية من خلال توفير المال، وتحسين جودة الهواء، والمساعدة في تغير المناخ؛ في الواقع، ستمنع هذه القواعد الأغنياء الوصول إلى بيئة أنظف بينما التأثيرات الاقتصادية والصحية والبيئية الإيجابية لهذه القاعدة لن تصل إلى أمجتمعات محدودة الدخل لسنوات عديدة، إن وجدت. سيؤدي حظر بيع السيارات الجديدة التي تعمل بالديزل والبنزين بحلول عام 2035 إلى إجبار أولئك الذين لا يستطيعون تحمل تكلفة السيارات الكهربائية على الاكتفاء بالسيارات المستعملة التي تعمل بالبنزين، مما يؤدي إلى تركيز المركبات التي تعمل بالبنزين وزيادة العادم الصادر منها فقط في المجتمعات منخفضة الدخل وزيادة أعبائنا البيئية.

من المفترض أن تكون قواعد "خيارات المراكب البيئية مبنية على العدالة والمساواة" ومصممة لمصنعي السيارات للاستثمار في مجتمعات مثل مجتمعنا من خلال جعل السيارات الكهربائية الجديدة والمستعملة أكثر سهولة ويسر، والاستثمار في برامج مشاركة السيارات المجتمعية. هذا النظام الانتقائي والقواعد المقترحة من شأنه تحويل المجتمعات الفقيرة إلى سلعة لهؤلاء المستثمرين بالإضافة إلى زيادة أعبائها المالية والبيئية. برامج المركبات الكهربائية والهجينة الحالية معقدة ويكاد يكون من المستحيل بالنسبة لنا الوصول إليها. نشعر أن هذه القواعد الجديدة لن تصل إلى مجتمعنا الفقير، ولا ينبغي تضمينها في حسابات الولاية "للمنافع البيئية". يجب استشارتنا حول الكيفية التي نريد أن يساعدنا بها هذا البرنامج قبل أن يتم تداولنا كائتمانات لمصنعي السيارات.

نحن نقدر هذه الفرصة لتقديم تعليق عام على هذه القاعدة، ومع ذلك، يجب أن تكون العملية أكثر شفافية، ويجب توفير القواعد المقترحة والأحداث العامة بلغات أخرى غير الإنجليزية، ويجب أن يكون الجمهور أكثر وعيًا بالتأثيرات المتوقعة لهذه القاعدة، وينبغي النظر في الخيارات البديلة لتوفير سيارات آمنة وبأسعار معقولة لسكان فيرمونت ذوي الدخل المحدود.

مع وأثر الإحترام؛

عضو مجلس

I am a single mom with 4 kids,
all goes to schools. we only
have one small car to take us
to school and shopping. if you
take out gas car and electric
cars replaced it, and prices stayed
high or it is going to be higher.
then I am worried I will not
be able to survive.

Greetings

My name is *AFaf Abd Allah* I am a resident of Vermont and a member of the Arabic community in Chittenden County. I am submitting this formal comment to the proposed Vermont Low Emission Vehicle and Zero Emission Vehicle Rule Number 22P021.

Electric vehicle incentive programs are not going to help families who don't have enough money for food, safe housing, or energy costs. Electric vehicles are not accessible to New American and other low-income communities due to their high costs, and should not be counted as an "environmental benefit" for our community. Members of our community work hard to pay our bills, but we are not being given the same opportunities for a clean environment and lower transportation costs as wealthier Vermonters.

These EV rules claim to provide economic and health benefits by saving money, improving air quality, and helping with climate change. In reality, these rules will give the rich access to a cleaner environment while the positive economic, health, and environmental impacts of this rule will not reach our community for many years, if ever. Banning the sale of new diesel and gasoline cars by 2035 will force those who cannot afford electric vehicles to settle for used gasoline powered cars, concentrating exhaust and gasoline powered vehicles in low-income communities and increasing our environmental burdens.

The "environmental justice vehicle value options" credits proposed by this rule are supposedly designed for automakers to invest in communities like ours by making new and used electric vehicles more accessible and affordable and investing in community car share programs. Instead, this credit system and proposed rules would commodify poor communities while actually increasing our financial and environmental burdens. The existing electric and hybrid vehicle incentive programs are complicated and nearly impossible for us to access. We feel these new benefits will not reach our community, and should not be included in the state's accounting of "environmental benefits." We should be consulted on how we want this program to help us prior to our communities being traded as credits for car manufacturers.

We appreciate this opportunity to provide a public comment on this rule, however, the process should be more transparent, the proposed rules and public events should be provided in languages other than English, the public should be made more aware of the impacts of this rule, and alternative options should be considered to provide safe, affordable cars for low-income residents of Vermont.

*AFaf abdallah
dorset street
South Burlington*

Rule: [https://dec.vermont.gov/sites/dec/files/aqc/mobile-sources/documents/Proposed Rule Summary Document.pdf](https://dec.vermont.gov/sites/dec/files/aqc/mobile-sources/documents/Proposed_Rule_Summary_Document.pdf)

Submit comment by email to: [REDACTED]

تحية طيبة

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مع وأثر الإحترام؛



I work as an arabic teacher to help my husband who works low paid job prices of food, gas, utilities are crazy high. We look into solution to reduce our bills but unfortunately the prohibitive prices of electric cars, making it unrealistic to be part of solutions.

Greetings

My name is *Aya Altaani* I am a resident of Vermont and a member of the Arabic community in Chittenden County. I am submitting this formal comment to the proposed Vermont Low Emission Vehicle and Zero Emission Vehicle Rule Number 22P021.

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The "environmental justice vehicle value options" credits proposed by this rule are supposedly designed for automakers to invest in communities like ours by making new and used electric vehicles more accessible and affordable and investing in community car share programs. Instead, this credit system and proposed rules would commodify poor communities while actually increasing our financial and environmental burdens. The existing electric and hybrid vehicle incentive programs are complicated and nearly impossible for us to access. We feel these new benefits will not reach our community, and should not be included in the state's accounting of "environmental benefits." We should be consulted on how we want this program to help us prior to our communities being traded as credits for car manufacturers.

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market street
South Burlington

Rule: https://dec.vermont.gov/sites/dec/files/aqc/mobile-sources/documents/Proposed_Rule_Summary_Document.pdf

Submit comment by email to: ruledec@vermont.gov

تحية طيبة

السلامة

انا اسمي

وانا مقيم في ولاية فيرمونت وعضو في مجتمع العرب

الكائنين في مقاطعة الشيتيتين. اقدم هذا التطبيق الرسمي على بعض القواعد الصادرة في ولاية فيرمونت والتي تحكم المركبات الكهربائية منخفضة الانبعاثات والمركبات ذو الانبعاثات الصفرية قاعة رقم P02122.

لن تساعد برامج حوافز المركبات الكهربائية العائلات التي ليس لديها ما يكفي من المال للطعم أو السكن الآمن أو تكاليف الطاقة. لا يمكن الحصول على هذه السيارات الكهربائية من قبل المجتمعات الأمريكية الجدد والمجتمعات ذات الدخل المنخفض بسبب ارتفاع تكاليف الشراء، ولا ينبغي اختيارها "مفتمة بيئية" لمجتمعنا. يعمل اعضاء مجتمعنا بجد لدفع الفواتير المطلوبة متة، لكننا لا نحصل على نفس الفرص التي تؤدي لبيئة نظيفة وتكاليف نقل اقل مثل اكريام الكائنين في فيرمونت.

تدعي هذه القواعد انها توفر فوائد اقتصادية وصحية من خلال توفير المال، وتحسين جودة الهواء، والمساعدة في تغير المناخ؛ في الواقع، ستنتج هذه القواعد الاغنياء الوصول إلى بيئة أنظف بينما التائبيرات الاقتصادية والبيئية الإيجابية لهذه القاعدة لن تصل إلى المجتمعات محدودة الدخل لسنوات عديدة، إن وجدت. سيؤدي حظر بيع السيارات الجديدة التي تعمل بالبنزين والبنزين بحلول عام 2035 إلى إجبار أولئك الذين لا يستطيعون تحمل تكلفة السيارات الكهربائية على الاقتران بالسيارات المستعملة التي تعمل بالبنزين، مما يؤدي إلى تركيز المركبات التي تعمل بالبنزين وزيادة العادم الضار منها فقط في المجتمعات منخفضة الدخل وزيادة اعبائنا البيئية.

من المفترض أن تكون قواعد "خيارات المركب البيئية مبنية على العدالة والمساواة" ومصممة لمصنعي السيارات للاستثمار في مجتمعات مثل مجتمعنا من خلال جعل السيارات الكهربائية الجديدة والمستعملة أكثر سهولة ويسر، والاستثمار في برامج مشاركة السيارات المجتمعية. هذا النظام الاتمائي والقواعد المقترحة من شأنه تحويل المجتمعات الفقيرة إلى سلة لؤلؤة المستثمرين بالإضافة إلى زيادة اعبائها المالية والبيئية. برامج المركبات الكهربائية والهجنبة الحالية معقدة وكعاد يكون من المستحيل بالنسبة لنا الوصول إليها. نشعر أن هذه القواعد الجديدة لن تصل إلى مجتمعاتنا الفقير، ولا ينبغي تضمينها في حسابات الولاية "المناخ البيئية". يجب استئمتنا حول الكيفية التي نريد أن يساعدنا بها هذا البرنامج قبل أن يتم تداولنا كائتمانات لمصنعي السيارات.

نحن نقدر هذه الفرصة لتقديم تعليق عام على هذه القاعدة، ومع ذلك، يجب أن تكون العملية أكثر شفافية، ويجب توفير القواعد المقترحة والأحداث العامة بلغات أخرى غير الإنجليزية، ويجب أن يكون الجمهور أكثر وعيًا بالتأثيرات المتوقعة لهذه القاعدة، وينبغي النظر في الخيارات البديلة لتوفير سيارات آمنة وبأسعار معقولة لسكان فيرمونت ذوي الدخل المحدود.

مع وافر الاحترام؛

I am a mother with three kids, 2 boys and one girl. my two boys are at university and they need to work to pay their tuition plus student loan. each one of them needs a car to go to school and work. they can't afford to pay for electric car because their credit limit will not allow to get any more loans. so what can they do, if there is no options available for affordable cars.

Greetings

My name is **ELVIRA KONJHOVAC** I am a resident of Vermont and a member of the Arabic community in Chittenden County. I am submitting this formal comment to the proposed Vermont Low Emission Vehicle and Zero Emission Vehicle Rule Number 22P021.

Electric vehicle incentive programs are not going to help families who don't have enough money for food, safe housing, or energy costs. Electric vehicles are not accessible to New American and other low-income communities due to their high costs, and should not be counted as an "environmental benefit" for our community. Members of our community work hard to pay our bills, but we are not being given the same opportunities for a clean environment and lower transportation costs as wealthier Vermonters.

These EV rules claim to provide economic and health benefits by saving money, improving air quality, and helping with climate change. In reality, these rules will give the rich access to a cleaner environment while the positive economic, health, and environmental impacts of this rule will not reach our community for many years, if ever. Banning the sale of new diesel and gasoline cars by 2035 will force those who cannot afford electric vehicles to settle for used gasoline powered cars, concentrating exhaust and gasoline powered vehicles in low-income communities and increasing our environmental burdens.

The "environmental justice vehicle value options" credits proposed by this rule are supposedly designed for automakers to invest in communities like ours by making new and used electric vehicles more accessible and affordable and investing in community car share programs. Instead, this credit system and proposed rules would commodify poor communities while actually increasing our financial and environmental burdens. The existing electric and hybrid vehicle incentive programs are complicated and nearly impossible for us to access. We feel these new benefits will not reach our community, and should not be included in the state's accounting of "environmental benefits." We should be consulted on how we want this program to help us prior to our communities being traded as credits for car manufacturers.

We appreciate this opportunity to provide a public comment on this rule, however, the process should be more transparent, the proposed rules and public events should be provided in languages other than English, the public should be made more aware of the impacts of this rule, and alternative options should be considered to provide safe, affordable cars for low-income residents of Vermont.

Elvira K.
North Ave
Burlington

Rule: https://dec.vermont.gov/sites/dec/files/aqc/mobile-sources/documents/Proposed_Rule_Summary_Document.pdf

Submit comment by email to: airpollution@vermont.gov

تحية طيبة

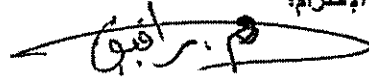
أنا اسمي **فابل رزغوع** وأنا مقيد في ولاية فيرمونت وعضو في مجتمع العرب الكانين في مقاطعة الشيبيندين. أقدم هذا التعليق الرسمي على بعض القواعد الصادرة في ولاية فيرمونت والتي تحكم المركبات الكهربائية منخفضة الانبعاثات والمركبات ذو الانبعاثات الصفيرية قاعدة رقم P02122. لن تساعد برامج حوافز المركبات الكهربائية العائلات التي ليس لديها ما يكفي من المال للطعام أو السكن الآمن أو تكاليف الطاقة. لا يمكن الحصول على هذه السيارات الكهربائية من قبل المجتمعات الأمريكية الجدد والمجتمعات ذات الدخل المنخفض بسبب ارتفاع تكاليف الشراء، ولا ينبغي اعتبارها "منفعة بيئية" لمجتمعنا. يعمل أعضاء مجتمعنا بجد لدفع الفوائد المطلوبة منه، لكننا لا نحصل على نفس الفرص التي تؤدي لبينة نظيفة وتكاليف نقل أقل مثل بقية الأثرياء الكانين في فيرمونت.

تدعي هذه القواعد أنها توفر فوائد اقتصادية وصحية من خلال توفير المال، وتحسين جودة الهواء، والمساعدة في تغير المناخ؛ في الواقع، ستمنح هذه القواعد الأغنياء الوصول إلى بيئة أنظف بينما التاثيرات الاقتصادية والصحية والبيئية الإيجابية لهذه القاعدة لن تصل إلى المجتمعات محدودة الدخل لسنوات عديدة، إن وجدت. سيؤدي حظر بيع السيارات الجديدة التي تعمل بالديزل والبنزين بحلول عام 2035 إلى إجبار أولئك الذين لا يستطيعون تحمل تكلفة السيارات الكهربائية على الاكتفاء بالسيارات المستعملة التي تعمل بالبنزين، مما يؤدي إلى تركيز المركبات التي تعمل بالبنزين وزيادة العادم الصادر منها فقط في المجتمعات منخفضة الدخل وزيادة أعبائنا البيئية.

من المقترض أن تكون قواعد "خيارات المراكب البيئية مبنية على العدالة والمساواة" ومصممة لمصنعي السيارات للاستثمار في مجتمعات مثل مجتمعنا من خلال جعل السيارات الكهربائية الجديدة والمستعملة أكثر سهولة ويسر، والاستثمار في برامج مشاركة السيارات المجتمعية. هذا النظام الائتماني والقواعد المقترحة من شأنه تحويل المجتمعات الفقيرة إلى سلعة لهؤلاء المستثمرين بالإضافة إلى زيادة أعبائها المالية والبيئية. برامج المركبات الكهربائية والهجينة الحالية معقدة ويكاد يكون من المستحيل بالنسبة لنا الوصول إليها. نشعر أن هذه الفوائد الجديدة لن تصل إلى مجتمعنا الفقير، ولا ينبغي تضمينها في حسابات الولاية "للمنافع البيئية". يجب استشارتنا حول الكيفية التي نريد أن يساعدنا بها هذا البرنامج قبل أن يتم تداولنا كائتمانات لمصنعي السيارات.

نحن نقدر هذه الفرصة لتقديم تعليق عام على هذه القاعدة، ومع ذلك، يجب أن تكون العملية أكثر شفافية، ويجب توفير القواعد المقترحة والأحداث العامة بلغات أخرى غير الإنجليزية، ويجب أن يكون الجمهور أكثر وعيًا بالتأثيرات المتوقعة لهذه القاعدة، وينبغي النظر في الخيارات البديلة لتوفير سيارات آمنة وبأسعار معقولة لسكان فيرمونت ذوي الدخل المحدود.

مع وافر الإحترام؛



I have a used car and I all
what I get is 860/month

How can I afford to pay

for an electric car. please

find a fair and just

solution to address climate

change.

Thanks,

9-22-22

Greetings

My name is Mike R Zaafra I am a resident of Vermont and a member of the Arabic community in Chittenden County. I am submitting this formal comment to the proposed Vermont Low Emission Vehicle and Zero Emission Vehicle Rule Number 22P021.

Electric vehicle incentive programs are not going to help families who don't have enough money for food, safe housing, or energy costs. Electric vehicles are not accessible to New American and other low-income communities due to their high costs, and should not be counted as an "environmental benefit" for our community. Members of our community work hard to pay our bills, but we are not being given the same opportunities for a clean environment and lower transportation costs as wealthier Vermonters.

These EV rules claim to provide economic and health benefits by saving money, improving air quality, and helping with climate change. In reality, these rules will give the rich access to a cleaner environment while the positive economic, health, and environmental impacts of this rule will not reach our community for many years, if ever. Banning the sale of new diesel and gasoline cars by 2035 will force those who cannot afford electric vehicles to settle for used gasoline powered cars, concentrating exhaust and gasoline powered vehicles in low-income communities and increasing our environmental burdens.

The "environmental justice vehicle value options" credits proposed by this rule are supposedly designed for automakers to invest in communities like ours by making new and used electric vehicles more accessible and affordable and investing in community car share programs. Instead, this credit system and proposed rules would commodify poor communities while actually increasing our financial and environmental burdens. The existing electric and hybrid vehicle incentive programs are complicated and nearly impossible for us to access. We feel these new benefits will not reach our community, and should not be included in the state's accounting of "environmental benefits." We should be consulted on how we want this program to help us prior to our communities being traded as credits for car manufacturers.

We appreciate this opportunity to provide a public comment on this rule, however, the process should be more transparent, the proposed rules and public events should be provided in languages other than English, the public should be made more aware of the impacts of this rule, and alternative options should be considered to provide safe, affordable cars for low-income residents of Vermont.

M. R. Zaafra
09/21/2022

Winooski

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Submit comment by email to: pm.development@vermont.gov

تحية طيبة

انا انا مسي

محمد العواس

وانا مقدم في ولاية فرمونت وعضو في مجتمع المويب

الكائنين في مقاطعة الضيقتين. اقدم هذا التعليق الرسمي على بعض القواعد الصادرة في ولاية فرمونت والتي تحكم المركبات الكهربائية منخفضة الانبعاثات والمركبات ذو الانبعاثات الصفرية قاعة رقم P02122.

ان تساعد برامج حوافز المركبات الكهربائية العائلات التي ليس لديها ما يكفي من المال للطعام أو السكن الآمن أو تكاليف الطاقة. لا يمكن الحصول على هذه السيارات الكهربائية من قبل المجتمعات الأمر يكتفين الجدد والمجتمعات ذات الدخل المنخفض بسبب ارتفاع تكاليف الشراء، ولا ينبغي اعتبارها "منفعة بيئية" لمجتمعنا. يعمل اعضاء مجتمعنا بجد لدفع القواثير المطلوبة منه، لكننا لا نحصل على نفس الفرص التي تؤدي لنتيجة وكاليف نقل اقل مثل بقية الاكثرياء الكائنين في فرمونت.

كدهي هذه القواعد انها توفّر فوائد اقتصادية وصحية من خلال توفير المال، وتحسين جودة الهواء، والمساعدة في تغير المناخ؛ في الواقع، ستنتج هذه القواعد الاغنياء الوصول الى بيئة أنظف بينما التأثيرات الاقتصادية والصحية والبيئية الإيجابية لهذه القاعة لن تصل الى المجتمعات محدودة الدخل لسنوات عديدة، ان وجدت. سؤدي حظر بيع السيارات الجيدة التي تعمل بالبنزين والبنزين بحلول عام 2035 الى اجبار اولئك الذين لا يستطيعون تحمل تكلفة السيارات الكهربائية على الاكثراء بالسيارات المستعملة التي تعمل بالبنزين، مما يؤدي الى تركيز المركبات التي تعمل بالبنزين وزيادة العدم الصالح منها فقط في المجتمعات منخفضة الدخل وزيادة اعبائنا البيئية.

من المفترض ان تكون قواعد "حيلرات السراكب البيئية مبنية على العدالة والمساواة" ومصممة لمصنعي السيارات للاستثمار في مجتمعات مثل مجتمعا من خلال جعل السيارات الكهربائية الجيدة والمستعملة أكثر سهولة وبس، والاستثمار في برامج مفرحة للسيارات المجتمعية. هذا النظام الائتماني والقواعد المكرحة من مثله تحويل المجتمعات الفقيرة الى سلعة لحوالام المستثمرين بالإضافة الى زيادة اعبائها المالية والبيئية. برامج المركبات الكهربائية والهجنية الحالية معقدة ويكاد يكون من المستحيل بالنسبة لنا الوصول إليها. نشعر ان هذه القواعد الجديدة لن تصل الى مجتمعا الفقير، ولا ينبغي تضمينها في حسابات الولاية "المنافع البيئية". يجب استثمارنا حول الكيفية التي نريد ان يساعدنا بها هذا البرنامج قبل ان يتم تداولنا كالكائنات المصنعي السيارات.

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مع وافر الاحترام؛

Mohmed ElKawas

My kids are grown up - I and my wife live in a small Condo, we own 2 cars that run by gas. Gas prices is getting very, very high and we are looking to buy hybrid or electric. but electric cars are extremely expensive and our income can't cover this price so we decided to get hybrid, but your incentive programs doesn't cover new hybrids, my question is why???

Greetings

My name is Mohamad Elkawas. I am a resident of Vermont and a member of the Arabic community in Chittenden County. I am submitting this formal comment to the proposed Vermont Low Emission Vehicle and Zero Emission Vehicle Rule Number 22P021.

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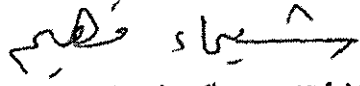
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Mohamad Elkawas
Essex Junction

Rule: https://dec.vermont.gov/sites/dec/files/aqc/mobile-sources/documents/Proposed_Rule_Summary_Document.pdf

Submit comment by email to: amad@vermont.gov

تحية طيبة

أنا اسمي  وأنا مقيم في ولاية فيرمونت وعضو في مجتمع العرب الكاثوليك في مقاطعة الشيتيندين. أقدم هذا التعليق الرسمي على بعض القواعد الصادرة في ولاية فيرمونت والتي تحكم المركبات الكهربائية منخفضة الانبعاثات والمركبات ذو الانبعاثات الصفراء قاعدة رقم P02122. لن تساعد برامج حوافز المركبات الكهربائية العائلات التي ليس لديها ما يكفي من المال للطعام أو السكن الآمن أو تكاليف الطاقة. لا يمكن الحصول على هذه السيارات الكهربائية من قبل المجتمعات الأمريكية الجدد والمجتمعات ذات الدخل المنخفض بسبب ارتفاع تكاليف الشراء، ولا ينبغي اعتبارها "منفعة بيئية" لمجتمعنا. يصل أعضاء مجتمعنا بجد لدفع القواتر المطلوبة منه، لكننا لا نحصل على نفس الفرص التي تؤدي لبيئة نظيفة وتكاليف نقل أقل مثل بقية الأثرياء الكاثوليك في فيرمونت.

تدعي هذه القواعد أنها توفر فوائد اقتصادية وصحية من خلال توفير المال، وتحسين جودة الهواء، والمساعدة في تغيير المناخ؛ في الواقع، ستمنع هذه القواعد الأثرياء الوصول إلى بيئة أنظف بينما التأثيرات الاقتصادية والصحية والبيئية الإيجابية لهذه القاعدة لن تصل إلى المجتمعات محدودة الدخل لسنوات عديدة، إن وجدت. سيؤدي حظر بيع السيارات الجديدة التي تعمل بالبنزين والبنزين بحلول عام 2035 إلى إجبار أولئك الذين لا يستطيعون تحمل تكلفة السيارات الكهربائية على الاكتفاء بالسيارات المستعملة التي تعمل بالبنزين، مما يؤدي إلى تركيز المركبات التي تعمل بالبنزين وزيادة العادم الصادر منها فقط في المجتمعات منخفضة الدخل وزيادة أعبائنا البيئية.

من المقترض أن تكون قواعد "خيارات المراكب البيئية مبنية على العدالة والمساواة" ومصممة لمصنعي السيارات للاستثمار في مجتمعات مثل مجتمعنا من خلال جعل السيارات الكهربائية الجديدة والمستعملة أكثر سهولة وسر، والاستثمار في برامج مشاركة السيارات المجتمعية. هذا النظام الائتماني والقواعد المقترحة من شأنه تحويل المجتمعات الفقيرة إلى سلعة لهؤلاء المستثمرين بالإضافة إلى زيادة أعبائها المالية والبيئية. برامج المركبات الكهربائية والهجينة الحالية معقدة ويكاد يكون من المستحيل بالنسبة لنا الوصول إليها. نشعر أن هذه القواعد الجديدة لن تصل إلى مجتمعنا الفقير، ولا ينبغي تضمينها في حسابات الولاية "للمنافع البيئية". يجب استشارتنا حول الكيفية التي نريد أن يساعدنا بها هذا البرنامج قبل أن يتم تداولنا كاتثمارات لمصنعي السيارات.

نحن نقدر هذه الفرصة لتقديم تعليق عام على هذه القاعدة، ومع ذلك، يجب أن تكون العملية أكثر شفافية، ويجب توفير القواعد المقترحة والأحداث العامة بلغات أخرى غير الإنجليزية، ويجب أن يكون الجمهور أكثر وعياً بالتأثيرات المتوقعة لهذه القاعدة، وينبغي النظر في الخيارات البديلة لتوفير سيارات آمنة وبأسعار معقولة لسكان فيرمونت ذوي الدخل المحدود.

مع وافر الإحترام؛

Electric and hybrid cars are an expensive investment and it needs to be considered if the cost is balanced by advantage ~~in~~ gas prices.

Public should be made more aware of this rule and its consequences.

Thanks.

meetings

My name is SHAYMA FAYM I am a resident of Vermont and a member of the Arabic community in Chittenden County. I am submitting this formal comment to the proposed Vermont Low Emission Vehicle and Zero Emission Vehicle Rule Number 22P021.

Electric vehicle incentive programs are not going to help families who don't have enough money for food, safe housing, or energy costs. Electric vehicles are not accessible to New American and other low-income communities due to their high costs, and should not be counted as an "environmental benefit" for our community. Members of our community work hard to pay our bills, but we are not being given the same opportunities for a clean environment and lower transportation costs as wealthier Vermonters.

These EV rules claim to provide economic and health benefits by saving money, improving air quality, and helping with climate change. In reality, these rules will give the rich access to a cleaner environment while the positive economic, health, and environmental impacts of this rule will not reach our community for many years, if ever. Banning the sale of new diesel and gasoline cars by 2035 will force those who cannot afford electric vehicles to settle for used gasoline powered cars, concentrating exhaust and gasoline powered vehicles in low-income communities and increasing our environmental burdens.

The "environmental justice vehicle value options" credits proposed by this rule are supposedly designed for automakers to invest in communities like ours by making new and used electric vehicles more accessible and affordable and investing in community car share programs. Instead, this credit system and proposed rules would commodify poor communities while actually increasing our financial and environmental burdens. The existing electric and hybrid vehicle incentive programs are complicated and nearly impossible for us to access. We feel these new benefits will not reach our community, and should not be included in the state's accounting of "environmental benefits." We should be consulted on how we want this program to help us prior to our communities being traded as credits for car manufacturers.

We appreciate this opportunity to provide a public comment on this rule, however, the process should be more transparent, the proposed rules and public events should be provided in languages other than English, the public should be made more aware of the impacts of this rule, and alternative options should be considered to provide safe, affordable cars for low-income residents of Vermont.

Shayma Faym
South Burlington

From: [Melissa Post](#)
To: [O'Toole, Megan](#)
Subject: in favor of the Advanced Clean Cars II and Advanced Clean Trucks rules
Date: Thursday, September 29, 2022 9:20:06 PM

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

Dear Ms. O'Toole,

I am writing to advocate for the passage of the Advanced Clean Cars II and Advanced Clean Trucks rules.

In my mind there is ample proof that we are in the midst of a rapidly escalating Climate Emergency. I believe that we need to ramp up our accessibility to electric or other zero-emission vehicles. I believe that the target of achieving all new car sales as zero-emission vehicles by 2035 is achievable if we demand it, and feel that these rules apply the necessary pressure to reach this target.

Of course, this is a complex issue. There need to be incentives for those who are less able to afford EV's; there needs to be better public transportation, bike paths; there needs to be the grid infrastructure to support this move toward EV's. But I feel that we will not get there fast enough if we let it evolve solely through the pathways of what-we-have-always-done. We need some pressure to achieve these things. I feel that these ACC II and ACT rules will apply the appropriate pressure.

I have just invested in an electric car, understand the great mental shift that goes with giving up fossil fuels. But I feel we HAVE to do it.

Thank you,

Melissa Post
1998 Trebo Rd.
Chester, VT

From: [Tim Hoopes](#)
To: [O'Toole, Megan](#)
Cc: thoopes@gmavt.net
Subject: In support of Advanced Clean Cars II & Advanced Clean Trucks initiative
Date: Friday, September 23, 2022 4:40:06 PM

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

Hello Megan,

I am writing in support of the Advanced Clean Cars II & Advanced Clean Trucks initiative. Vermont is a small state, uniquely positioned to be able to detach from the Fossil Fuel economy with the right supports. Already Cold Climate Heat Pumps have reduced the need for Fossil Fuel burning in homes and businesses all across Vermont, with more going in every day. LED light bulbs helped to cut back on the consumption of electricity. Now we need to get our Transportation system OFF of Fossil fuels. The Air & the Water of Vermont could be much cleaner, and residents of this State want that to happen enough to take action and pay for much of that progrees themselves. I use my Nissan Leaf all electric car for my commute & have more than half of my own personal electricity coming from solar panels at my house. I hope to add more soon to make it 100%. We want this initiative and we want to lead the way, set an example for the country and the world, show everybody how it's done.

Thanks,
Tim H

From: [Mike Madden](#)
To: [O'Toole, Megan](#)
Subject: In Support of Zero Emission Vehicles in Vermont
Date: Wednesday, September 28, 2022 8:51:29 PM

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

Vermont is poised to adopt new rules that would expand access to the zero-emission vehicles necessary to fight climate change. The Advanced Clean Cars II & Advanced Clean Trucks rules will require automakers to deliver more zero-emission electric vehicles to Vermont, requiring all new cars auto manufacturers sell in Vermont be electric vehicles or other zero-emission vehicles by 2035.--

-Michael

From: [Matthew von Behrens](#)
To: [O'Toole, Megan](#)
Subject: Letter in support of zero emissions vehicles by 2035
Date: Thursday, September 1, 2022 1:26:14 PM

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

Hi Megan -

I'm writing in support of proposed legislation that would require all vehicles sold in Vermont to be zero emissions by the year 2035. While I confess I'm not knowledgeable enough in the technical matters that would determine the feasibility of this effort and time frame, I also know that without proposed targets and proposed legislation, the technical aspects are often not explored at all with the result that no progress is made at all towards worthy goals like zero emissions. I plan to follow these developments closely as the hearings unfold and eagerly await news of how we as Vermonters can help contribute to (if not lead in!) the overall global effort to reduce emissions that contribute to global warming.

Thanks, Matthew von Behrens

From: [Paul Beauregard](#)
To: [O'Toole, Megan](#)
Subject: Low and Zero emission vehicle regulation
Date: Tuesday, September 6, 2022 8:47:41 AM

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

Hi Megan,

I'm sorry I won't be able to make the meeting today. To say the least, I have a bit to say about this. So my voice is heard...somewhat, I'll summarize below.

1. These medium and heavy trucks you talk about aren't readily available. In fact, I haven't seen anyone mass producing them for sale. If they became for available they would be untested.
2. I can't help but notice that neither the state nor any town or municipality nor the electric companies are buying anything but diesel trucks. Perhaps you should do it first.
3. You don't have the available power. And where will that power come from at night in the middle of the winter... gas and nuclear power plants running at 40% efficiency 500 miles from here.

You don't have the equipment...you don't have the power...you will cause irreparable damage to our economy...and put peoples lives in jeopardy.

The goals can be met...but not like this.

Paul Beauregard
Onsite Septic Solutions, LLC
Onsite Propane
644-5500

From: [Kathleen Guinness](#)
To: [O'Toole, Megan](#)
Date: Thursday, September 29, 2022 8:00:01 AM

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

Transportation

We NEED advances in clean cars and trucks. Hybrid and electric are going to save the planet. Let's get more of them out there and more incentives to buy them. We cannot keep relying on fossil fuel which is polluting our state and our ecosystem.

Thank you. I know you will do what's right for us and our descendants.

Kathleen Guinness

From: [Glennie Sewell](#)
To: [O'Toole, Megan](#)
Date: Wednesday, September 28, 2022 9:07:42 PM

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

We've run out of excuses. The shifting climate needs to be adapted to, as it is here to stay. It is our job to ease those climate changes, and work to have better transportation sources that are renewable, that are as close to net-zero fossil fuels as we can get them. Stop giving the fossil fuel companies and overwhelming hand at the table. Their heavy hand has hurth this world. They can either decide to be part of the issue, or stand down. The Legislature needs to bring that choice to a head.

Respectfully,
Glennie Fitzgerald Sewell
Prog Candidate for Legislature
Washington-4

From: [george ryan](#)
To: [O'Toole, Megan](#)
Date: Friday, September 23, 2022 8:18:20 PM

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

I'm very much in favor of the advanced clean can and truck agenda. This state deserves it.
Thank you, George Ryan

From: [Julie Haupt](#)
To: [O'Toole, Megan](#)
Subject: Maximize zero emissions vehicles
Date: Wednesday, September 28, 2022 3:44:32 PM

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

Please maximize the number of zero emissions vehicles, including trucks and public transit vehicles.

Thank you,
Tim Marr
Bennington, VT

From: [Mary Madden](#)
To: [O'Toole, Megan](#)
Subject: My Chevy Bolt!
Date: Wednesday, September 28, 2022 4:40:35 PM

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

Hi,

I bought a slightly-used 2022 Chevy Bolt EUV this year. I LOVE it! But I'm disappointed at the slow pace of installing charging stations (except for Teslas)! Please make this a major focus of your programs and legislation.

Thank you,
Mary Madden
350 South St, South Hero, VT 05486

From: [Jack Hanson](#)
To: [O'Toole, Megan](#)
Subject: My Public Comment on Advanced Clean Cars II and Advanced Clean Truck Rules
Date: Wednesday, September 28, 2022 1:48:58 PM

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

Hi Megan,

Please see my public comment below. Please confirm that this has been properly submitted and received.

Thank you,
Jack Hanson
Burlington, VT

I support these new rules and I would encourage that Vermont go above and beyond these baseline standards. The climate crisis demands a faster and more aggressive response. Lives are on the line and we need to phase out fossil fuels as quickly as possible. Please accelerate the phase-out timeline and mandate that no combustion engine vehicles are sold in Vermont after 2027.

Sincerely,
Jack Hanson
Burlington, Vermont

From: [Heather Johnson](#)
To: [O'Toole, Megan](#)
Subject: My public comment
Date: Thursday, September 29, 2022 10:09:13 PM

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

To whom it may concern,

When I think of the state of climate crisis We have begun, and when I think about what can be done, I hear myself saying "shouldn't we do everything we can...I mean shouldn't we..?" I think "If we don't do something now, then when?". I think ugghh, it's already so late in the game.

A "game" I have personally seen coming since the '80's. I think, at the very least I/we owe a debt to the future. I owe a debt to the future and to those who are coming . We who are here now and all of life and it's forms that have gone before us, we have all lived, been fed, nourished, sustained by the earth, water, air, and atmospheric conditions that have all had to be "right " in order for us to live.

And now after so much using and so much taking, "We" are quite honestly in a mess and at dire crossroads. There are a variety of things that can be done to help off set the extreme consequential hardships that all this energy consumption has set into motion.

So again, I ask of myself and to those making policy as well as to my fellow humans : Do we not have a responsibility right now, to do everything in our power and ability to shift into more life sustaining choices for all those who are here and for all those who are coming" ?

Isn't that our responsibility ? And if not now when we can still make a difference , then when? Is there really any issue that is actually more important than whether or not and how well, we survive as a species? I mean, I know there are alot of concerns and important issues but isn't this one issue the "Mother" of them all ?

I am in support of a zero emission vehicle future and ask that you as policy makers pass the laws, rules , standards, incentives, grants etc.. necessary to make that happen. No more waiting, please no more waiting.

I also ask that as a state we make it our priority to create a plan backed with resources that will make this a practical reality for all Vermonters. As a low paid childcare worker for decades , I know first hand that this needs to be accessible and I urge the planning conversations to look to those means and find out from real folks what would we need in order to access and step into this change.

Thank you.

Heather Johnson

From: Joanne Esau
To: O'Toole, Megan
Subject: Neighborhood Electric Vehicles
Date: Saturday, August 27, 2022 7:56:10 AM

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

I saw your name in the WCAX news today regarding electric vehicles.
I live in Quechee and during the pandemic I purchased a GEM car. Everything about having that car was wonderful EXCEPT dealing with the State of Vermont Inspection process.

I have written to the Governor a few times and sent copies to legislatures who seem to publicly support electric vehicles.. to no avail and limited response.
I'm wondering if you might have more of an interest in helping our "cause" ... which is an improved system for registering Neighborhood Electric Vehicles.

I researched this topic extensively before purchasing my GEM. That alone was an education because I had to contact numerous persons at Motor Vehicles before anyone could find any one who works there who knew anything about them or the existing state regulations. Eventually they found a person who did know that GEM cars existed and did know that VT actually has regulations in place for them. That was a start at least.

Consequently I purchased the car only to find out that it still needs to be inspected yearly. My neighbor works at an inspection facility but was not able to inspect my vehicle locally because it still had to be "plugged" into the VT state system,

So to register my GEM every year I had to hire a tow truck at significant expense and have it towed to White River Jct to get an inspection sticker. Despite the fact that there is nothing to actually inspect in a GEM except the seat belts, wipers and break .. and probably a few other items.. but at any rate the inspection site said not much. I also had to shop around to find someone who would inspect it because most inspection sites said they just could not understand what they were inspecting.

Not only was the transport expensive it totally defeats the point. You hire a huge, huge town truck to pick up this little car, burn all that fuel two ways every year. Stupid really applies here.

I sold the GEM . The new owners loved it until they had to get it inspected so they just sold it to another person. A friend just bought a road legal golf cart and drove to Montpelier to get the plates. No one in the office knew what to do.. After almost an hour an employee gave him a temp plate and promised to get back to him once he "found someone to show him how to register it"..

We live in a town that has miles of roads posted under 35 mph, which these cars are restricted to by law. We can drive to our Post Office, restaurants, golf course, fitness facilities, lakes, rivers, and ski area all on roads under 35 mph. We can park in a designated area and walk up to Rt 4 and do all of our grocery shopping at Jakes Market Quechee.. basically I can use a Neighborhood Electric Vehicle for all of my local needs. Yet the State of Vermont has put up this major road block to residents by requiring that they haul that little car to an inspection station yearly.. Many our residents are part time. They come up to VT in a huge SUV but could park that car for their entire stay and drive a clean electric cart. So many people loved my GEM and were interesting in purchasing a similar vehicle only to learn of the hassles and frustrations those of us have run into dealing with the state of Vermont.

There has to be a better way. Seriously.

On another note, I sold a big gas consuming Toyota SUV this year.. I had to sell it for mechanical reasons.. I was on 6 lists to get an electric RAVE , 3 of them out of state. Eventually I took back all of my deposits at all of these dealers and bought a used gas car. The dealers told me it would be late fall or winter before I would maybe get an electric car....so I do giggle a bit when I read about all these lofty goals we have in Vermont when really these vehicles are only for the wealthy who can buy a Tesla or a Volvo the affordable electrics are just not there for the average person.

Joanne Esau
jesau@comcast.net

From: [Phil Hadley](#)
To: [O'Toole, Megan](#)
Subject: New Advanced Clean Cars II & Advanced Clean Trucks rules
Date: Wednesday, September 28, 2022 4:26:11 PM

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

Hi, Megan

I understand that you are collecting comments on the new rules, so here I go.. ;-)

I am in full support of the new rules as written. We need more zero-emission vehicles on the road in VT if we are to meet VT's goals for a livable planet. A target of 2035 for these rules is far too late, however it is a step in the right direction. We will adjust our target to be more aggressive in the future as we witness more catastrophic weather events such as drought, fire, hurricanes, etc. But this is a good start. Thank you for your support on this!

Phil Hadley
Middlebury

From: [Lisa Bernardin](#)
To: [O'Toole, Megan](#)
Subject: No more Fossil Fuels!!
Date: Thursday, September 29, 2022 7:04:34 AM

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

PLEASE stop building gas vehicles!! We are seeing how it is affecting our country and world.

Thank you,
Lisa Bernardin

From: [David Rosenlund](#)
To: [ANR - Vermont Climate Council](#)
Subject: Not able to attend meeting
Date: Saturday, August 27, 2022 2:01:08 AM

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

Im not able to attend the upcoming meetings. But wanted to throw my 2 cents in.

On paper electric vehicles are great. But there are some major hurdles that make them not practical for the more rural Vermonters.

First is cost. The price is too high for many Vermonters. Myself included.

Second, maintenance costs. Vermont winters are notoriously hard on batteries. The cost of replacing the batteries in EVs is astronomical! After seeing news stories about EVs repair bills. It would be cheaper to get another car.

Third, they need to be self regenerating. One can't just pull over and plug in. There isn't enough power stations. If you find one, the demand for their use will greatly increase causing lines to form.

Fourth, towing. I have a small sailboat. I have yet to see an affordable option for vehicles capable of towing a 19ft sailboat. EV or hybrid

Personally, I don't have confidence in them yet. The technology isn't there yet. EVs are great for those that live in more populated areas. But when you have to drive an hour for a doctor's appointment or shopping you're stuck waiting for a car to charge.

I'm not confident that I'd find a vehicle that will do what I need it to do, be owner maintainable and be affordable.

I'll be keeping my gas vehicle for quite a bit longer.

Dave Rosenlund

Bundin er båtlaus maður
(Bound is boatless man)
Viking saying

From: [Charles Hazen](#)
To: [O'Toole, Megan](#)
Cc: [Joe Benning](#); [Randy Brock](#); bmurphy@leg.state.vt.us
Subject: Opposed- Advanced Clean Cars II & Advanced Clean Trucks
Date: Wednesday, August 31, 2022 4:53:28 PM
Attachments: [VPIRG- email.pdf](#)

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

Ms. Megan O'Toole,

I am opposed to the requirement that all new Vermont vehicles are electric by 2035. Mandating these requirements puts an undue burden on Vermonters with little to no understanding of the third order of effects. I suggest that a pragmatic approach is taken by allowing other states to lead the way in this effort and learning from their successes and failures.

We have seen the stress that these efforts have placed on the electrical grid across the country. Forcing this situation on our stretched Vermont grid is irresponsible at best while placing a tremendous burden on our poorest. Financially, this burden will place those with the least in an ever-tightening noose of financial decision-making and reduces freedom of choice which is antithetical to our values. While I appreciate the desire to be environmentally conscious, we must do so in a way that is human-centric in its considerations and not put idealism at the forefront and all else be damned for the greater "idealistic" good.

I look forward to hearing that you support Vermont learning from our counterpart states in their desire to charge headlong into these turbulent waters without understanding the infrastructure timelines necessary, the REAL cost implications, and the waste management solutions that will be required with the 100% electrical vehicle changeover. The timelines do not need to be mandated and Vermont can learn from other states without the undue burden that this would cause.

Ref: Attached VPIRG Email

Sincerely,

--

Charles Hazen
Fairfax, VT
(M)802.735.7062



Charles Hazen <charles.hazen@gmail.com>

Speak up for clean cars & trucks in Vermont!

1 message

Ben, VPIRG <vpirgalert@vpirg.org>
Reply-To: vpirgalert@vpirg.org
To: Charles Hazen <charles.hazen@gmail.com>

Wed, Aug 31, 2022 at 3:35 PM



Dear Charles,

Transportation is the single largest contributor to climate pollution in Vermont, but it has been difficult for Vermonters to find the zero-emission vehicles that are necessary to meet our state's climate goals. Fortunately, it is about to become a lot easier thanks to new rules that Vermont is poised to adopt this December.

The Advanced Clean Cars II & Advanced Clean Trucks rules will **require automakers to deliver more zero-emission electric vehicles to Vermont**, ultimately requiring **all new cars auto manufacturers sell in Vermont be electric vehicles or other zero emission vehicles by 2035**. And we'll be in good company, with more than a dozen states representing more than a third of US auto sales on track to make this move along with us.¹ This is a crucial step in pushing us towards a zero-emission future.



Unfortunately, the passage of these rules is not a sure thing. While our leaders have voiced support for vehicle electrification, powerful trucking and fossil fuel interests are lining up to oppose their adoption. **We need voices like yours to make sure that we clear this milestone** – there are several public hearings scheduled around the state in the coming weeks, and we need as many concerned Vermonters to attend as possible to offset the presence of the fossil fuel industry.

Below is a list of in-person events – register for the one closest to you, and we will follow up with all the information necessary to make your public comment as effective as possible.

Manchester: 9/7/22 6:00 pm Park House, 340 Rec Park Road

Newport: 9/8/22 6:00 pm Gateway Center, First Floor, 84 Fyfe Drive

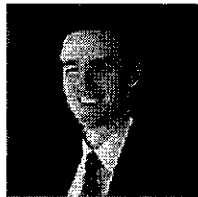
Burlington: 9/14/22 6:00 pm Burlington Old North End (O.N.E.) Community Center 20 Allen St

Bellows Falls: 9/15/22 6:00 pm Bellows Falls Opera House, Lower Theatre, 7 Square

Barre: 9/21/22 5:00 pm Aldrich Public Library, Milne Room, 6 Washington Street

REGISTER FOR A PUBLIC HEARING!

If you are unable to attend any of these in-person hearings, you can also submit a public comment. The public comment period is open until September 30, 2022. Comments on the proposed rules may be submitted via email to: megan.otoole@vermont.gov, or by mail: Megan O'Toole, Vermont Agency of Natural Resources, 1 National Life Dr, Davis 4, Montpelier, VT 05620, and there will also be a virtual hearing option September 23rd at 12:00 PM. Please reach out with any questions by responding to this email.



Thanks for all you do,

Ben Edgerly Walsh
Climate & Energy Director, VPIRG

1 <https://www.nytimes.com/2022/08/24/climate/california-gas-cars-emissions.html>

Vermont Public Interest Research Group
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VPIRG
141 Main Street
Ste. 6
Montpelier, VT 05602
United States
(802) 223-5221

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CONTRIBUTE

From: [Kimberly Hornung-Marcy](#)
To: [O'Toole, Megan](#)
Subject: Please add good rules for green cars
Date: Wednesday, September 7, 2022 12:40:35 PM

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

Dear Ms O'Toole:

I write in support of rules that will ask dealers to send more Electric vehicles in Vermont for sale and that all cars sold in VT be Electric by 2035.

My husband and I have been driving an electric car for almost one year now. We LOVE IT.

Do not miss stopping for gasoline.

Do not miss lots of car maintenance dates.

Do love the safety features, easy of driving, connection to vast online stuff through a large in car screen such as very large map that shows where you are going.

Do love the voice commands for a number of car functions from answering phones or texts to navigating to where we need to go.

Do love that we are not polluting and contributing further to climate change.

We have a hybrid car but mainly we drive the EV. We have to stop burning stuff if we are going to slow down climate change which is already so harsh in many parts of the world.

We have to promote green solutions to our #1 emission sector—transportation.

Sincerely,

Kim Hornung-Marcy

From: [Heather Stevenson](#)
To: [O'Toole, Megan](#)
Subject: Please pass the Advanced Clean Cars II & Advanced Clean Trucks rules
Date: Thursday, September 29, 2022 4:40:26 AM

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

Good morning,

I support the passage of the Advanced Clean Cars II and Advanced Clean Trucks rules. My family moved from Maryland to Rutland, Vermont six years ago for my father's health. Had we stayed in Maryland, he probably would have died by now thanks to the pollution of the air and his compromised breathing. Vermont has a crucial role in ensuring that we survive climate change. The economic rewards of building a greener economy will more than pay off any immediate costs.

Please pass these rules to ensure our passage to a zero-emission future.

Thank you!
Heather Juliussen-Stevenson
802-353-0998
Rutland, Vermont

From: [Bourbon, Elizabeth](#)
To: [ANR - DEC Lev Zev](#)
Subject: Proposed Amendments to the Air Pollution Control Requirements, Low Emission Vehicle and Zero Emission Vehicle Regulations - Comments of Valero Marketing and Supply Company
Date: Friday, September 30, 2022 3:56:05 PM
Attachments: [2022-09-30 VMSC Julie Moore .pdf](#)

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

Attached please find comments submitted on behalf of Valero Marketing and Supply Company regarding the abovereferenced proposed rule amendments. We greatly appreciate your consideration.

Elizabeth Bourbon
Senior Managing Counsel
Fuels Policy and Compliance Law
The Valero Companies
One Valero Way
San Antonio, TX 78249
(210) 345-4650
elizabeth.bourbon@valero.com



September 30, 2022

Secretary Julie Moore
Vermont Agency of Natural Resources
Department of Environmental Conservation
Davis Building - 3rd Floor
One National Life Drive
Montpelier, VT 05620-3520
anr.declevez@vermont.gov

RE: Comments on Proposed Amendments to the Air Pollution Control Regulations, Low Emission Vehicle and Zero Emission Vehicle Regulations

Dear Secretary Moore:

Valero Marketing and Supply Company ("Valero") appreciates the opportunity to comment on the "Proposed Amendments to the Air Pollution Control Regulations, Low Emission Vehicle and Zero Emission Vehicle Regulations" (the "Proposed Regulations") dated on or about August 15, 2022. As a leading fuels marketer, Valero supplies heating oil and other fuels to Vermont. Valero, through affiliates and joint ventures, is the world's largest producer of renewable fuels.

The Agency of Natural Resources ("ANR") has proposed an amendment to its low emission vehicle ("LEV") and zero emission vehicle ("ZEV") rules, which incorporate by reference California's motor vehicle emission standard regulations¹ and its ZEV mandate. Specifically, ANR proposes to amend its existing rules by adopting California's Advanced Clean Cars II (which amends Advanced Clean Cars I, currently in effect), Advanced Clean Trucks, Low NOx (oxides of nitrogen) Heavy-Duty Omnibus Regulations, and California's Phase 2 Greenhouse Gas ("GHG") Rule.

Valero supports and endorses the comment letter submitted by the Vermont Fuel Dealers Association and the Northeast Agribusiness & Feed Alliance responsive to the Proposed Regulations. In addition, Valero respectfully offers the following comments for Vermont's consideration.

I. COMMENTS

A. Rather than a model, California's policies should be viewed as a well-meaning, but cautionary tale for Vermont and other states that are considering their adoption.

In its rulemaking, ANR should consider the implications that a strategy focused solely on electrification may have on community decision-making, consumer choice, and the unintended consequences that sole reliance on electrification may present, including foreign supply chain disruptions

¹ The LEV Rules set standards for emissions of criteria air pollutants and greenhouse gases from passenger cars, light-duty trucks, and medium- and heavy-duty vehicles and engines that are delivered for sale or placed in service in Vermont. The ZEV Rules set standards that ultimately require auto manufacturers to deliver more electric vehicles to Vermont.
Valero Marketing and Supply Company

and forced labor that sacrifices human dignity for the raw materials needed to manufacture batteries.² A lifecycle analysis by Arthur D. Little concluded that "...the ultimate environmental and economic reality of EVs is far more complicated than their promise...Combined with the greater financial burden [EVs] place on the consumer, the complex environmental reality of EVs will continue to present challenges for the sustainability-minded consumer."³

California policymaking is hardly an unqualified success story. Its climate policies – many of which ANR’s Proposed Regulations seek to adopt – may have had major impacts on gasoline and energy prices, as well as jobs in certain industries that are directly related to traditional fuels and the ICE vehicle.⁴ While often lauded as the measuring stick for GHG emission reduction policies, California’s transportation fuel prices are now the highest in the nation, averaging approximately \$5.48 per gallon of gasoline.⁵ Its current cost of living is 38% higher than the average U.S. city due in significant part to the cost of gas and utilities.⁶ According to a 2021 Report from the California Public Utilities Commission, “it is already cheaper to fuel a conventional internal combustion engine (ICE) vehicle than it is to charge an EV” in the San Diego Gas & Electric Co. service area.⁷ The California Energy Commission projects that both commercial and residential electricity prices will continue to rise, reaching over \$8/gasoline gallon equivalent (GGE) by 2026 for the residential sector and nearly \$7/GGE for the commercial sector.⁸ California saw a decline of 117,552 residents in 2021 and 182,083 residents in 2020, ascribed in part to the soaring cost of living.⁹ As California has faced rolling blackouts and historic energy prices, Governor Newsom in his May 2022 state budget proposal, has pivoted to the use of traditional fuel infrastructure to ensure system reliability to protect against outages.¹⁰ Vermont cannot afford to implement California’s climate policies that have already proven problematic, will continue the massive decline in population, and continue to increase consumer costs. For example, in the first calendar quarter of 2022, the average retail price for the top-selling BEVs in the U.S. was more than \$62,000;¹¹ by contrast, the medium per capita and household income in Vermont are approximately \$36,000 and \$63,000, respectively.¹²

Moreover, unworkable bans on in-state vehicle sales put Vermont at risk of missing out on real carbon reductions available through incentivizing low-carbon liquid fuels and by discouraging the development of emerging carbon removal technologies. As discussed above, as California has felt the real-world implications of its climate policy with rolling blackouts and sky-high energy prices, it is now implementing a broader approach to GHG reductions that includes investment in carbon capture and fossil fuel infrastructure to ensure future system reliability. ANR need not focus on an inexplicable fear of prolonged reliance on liquid fuels infrastructure. In our view, considering the very real limitations and economic impacts that will stem from the Proposed Regulations, Vermont will be unable to meet its climate goals in a feasible or cost-effective manner without a diverse set of technologies at its disposal.

² See U.S. Department of Energy, *2022 List of Goods Produced By Child Labor or Forced Labor*, at 50-51, https://www.dol.gov/sites/dolgov/files/ILAB/child_labor_reports/ida2021/2022-TVPR-List-of-Goods-v3.pdf.

³ See <https://www.nationalobserver.com/2021/01/21/opinion/electric-cars-have-dirty-little-recycling-problem-their-batteries>.

⁴ California Legislative Analyst’s Office, *Assessing California’s Climate Policies – An Overview* (Dec. 21, 2018).

⁵ AAA, *Today’s AAA California Avg.*, <https://gasprices.aaa.com/?state=CA> (accessed Sept. 19, 2022).

⁶ <https://www.bls.gov/regions/west/california.htm>; see also <https://www.ramseysolutions.com/real-estate/cost-of-living-in-california>.

⁷ CPUC, *Utility Costs and Affordability of the Grid of the Future: An Evaluation of Electric Costs, Rates, and Equity Issues Pursuant to P.U. Code § 913.1*, at 116-117 (May 2021).

⁸ CEC, “Presentation - Transportation Energy Demand Forecast,” 21-IEPR-03 (Dec. 14, 2021).

⁹ Tim Arango, *For Second Straight Year, California Sees a Population Decline*, New York Times (May 4, 2022).

¹⁰ <https://www.ebudget.ca.gov/2022-23/pdf/Revised/BudgetSummary/ClimateChange.pdf>.

¹¹ Registration-weighted average retail price for the 20 top-selling BEVs in the U.S. S&P Global, *Tracking BEV prices – How competitively-priced are BEVs in the major global auto markets?*, May 2022.

¹² Estimates as of July 1, 2021, representing the income over the past 12 months, in 2020 dollars. U.S. Census Bureau, *Quick Facts – Vermont*, <https://www.census.gov/quickfacts/VT>.

B. ANR Lacks the Legal and Legislative Authority to Adopt a Transport Electrification Mandate.

It is crucial that the policy directives guiding ANR's rulemaking actions be supported by both state and federal law in order to avoid inefficient expenditures of time and resources, or worse, misleading the public by setting expectations regarding outcomes that are not within the State's authority to mandate. CAA § 177 provides that a state may only adopt "such standards [that] are identical to the California standards for which a waiver has been granted for such model year".¹³ As of the date of this letter the U.S. Environmental Protection Agency ("EPA") has not granted a waiver of preemption under the CAA for California's ACC II and ACT rules. Accordingly, ANR's adoption of these rules is premature and inconsistent with the express terms of § 177.

The measures contemplated by ANR's Proposed Regulations are extraordinary, yet there is little to no legal analysis to confirm that the novel approaches and requirements mandated under the regulations are within ANR's authority and do not offend principles of state or federal law. ANR should consider whether the measures called for in the Vermont LEV and ZEV rule conflict with or are otherwise preempted by the statutory mandates of federal legislation such as the Energy Policy and Conservation Act ("EPCA"); the federal CAA; the Energy Independence and Security Act ("EISA"), including the Renewable Fuel Standard ("RFS").

ACC II and ACT will have vast nationwide political and economic significance. The proposed sale requirements that mandate a shift to BEV and FCEV trucks at the expense of ICE vehicles will significantly impact supply chains, consumer costs, electric power infrastructure, domestic energy security, and will have international consequences. U.S. Congress has previously considered and rejected numerous bills intended to mandate electrification of LD and MHD vehicles. ANR cannot now seek to do what Congress has itself declined to enact.

Additionally, the Proposed Regulations call for measures that may violate other constitutional provisions and principles. These include, but likely are not limited to, the Dormant Commerce Clause, which prohibits state regulations that improperly discriminate against out-of-state commercial interests or that unduly burden interstate commerce, as well as the dormant foreign affairs preemption doctrine under the Supremacy Clause, which preempts state laws that intrude on the exclusive federal power to conduct foreign affairs, the Takings Clause of the Fifth Amendment, which precludes the taking of private property (or the elimination of entire industries) for public use without just compensation, and the equal sovereignty doctrine, which constraints the federal government from treating states disparately.

Because the measures called for under the LEV and ZEV rules are unprecedented in their scope and reach, ANR should pause to conduct sufficient legal review to confirm that the recommended actions are authorized under state law and that they are not preempted or precluded as a matter of federal law before establishing direction for further rulemaking.

C. Limitations of CAA § 177.

The early stages of California's ZEV program were mired by low consumer acceptance, slow technological advancement, missed goals, and backtracking. While California's goals remained aspirational, it always maintained (and several times applied) the ability to re-write the rules when the

¹³ 42 U.S.C. § 7507(2).

program proved infeasible for automakers.^{14, 15, 16} The limitations in § 177 of the CAA do not provide states (other than California) with the flexibilities to adjust ambitious targets to accommodate the realities of record inflation, extraordinary supply chain disruptions, global uncertainty due to the lingering pandemic and the war in Ukraine, and critical concerns about the availability, cost and foreign dependence of minerals needed for EV batteries. Rather, states may adopt and enforce standards to control emissions from new motor vehicles only if “such standards are identical to the California standards”.¹⁷

ANR must carefully consider what the implications will be if reality cannot keep pace with its ambitions – e.g., if automakers cannot supply ZEVs in the numbers needed to meet ANR’s proposed LD and MHD sales mandates, if consumers choose not to or cannot afford to purchase the ZEVs, and if the electrical grid and EV charging infrastructure cannot keep pace with the growth in EV fleet. Without the option of modifying the rules to accommodate EV realities, states adopting California’s standards via § 177 risk creating for themselves a quagmire in which automakers are unable to sell and consumers unable to purchase the new vehicles.

II. CONCLUSION

Thank you for the consideration of our comments. We hope these comments assist ANR as it evaluates the Proposed Regulations. If you have any questions or would like to discuss Valero’s experience and perspective, please do not hesitate to reach out.

Sincerely,



Elizabeth Bourbon
Sr. Managing Counsel

¹⁴ California Air Resources Board (“CARB” or “ARB”), *ARB Modified Zero-Emission Vehicle (ZEV) Regulation* (April 24, 2003) <https://ww2.arb.ca.gov/news/arb-modifies-zero-emission-vehicle-zev-regulation> (providing that ARB voted to modify California’s ZEV rule in order to allow automakers to meet part of their ZEV requirement).

¹⁵ CARB, *Notice of Public Hearing to Consider Proposed Amendments to the California Zero-Emission Vehicle Regulations Regarding Treatment of Majority Owned Small or Intermediate Volume Manufacturers and Infrastructure Standardization* (May 1, 2001) <https://ww3.arb.ca.gov/regact/charger/notice.htm> (stating that “[a]t a January 25, 2001, hearing, the Board approved major changes to the ZEV regulations that will significantly reduce the number of ZEVs required during the near term”).

¹⁶ CARB, *Proposed 2014 Amendments to the Zero Emission Vehicle Regulation* (September 2, 2014) <https://ww2.arb.ca.gov/sites/default/files/barcu/regact/2014/zev2014/zev14isor.pdf?viewType=Print&viewClass=Print> (stating that “California could see about 26,000 fewer ZEVs and TZEVs delivered in the 2018 through 2025 model years than would be delivered under the existing regulation”).

¹⁷ See 42 U.S.C § 7507.

From: [Tom Van Heeke](#)
To: [ANR - DEC Lev Zev](#)
Subject: Proposed Chapter 40: Vermont Low Emission Vehicle and Zero Emission Vehicle Rules--Rivian Automotive, LLC, Comments
Date: Friday, September 30, 2022 9:41:46 AM
Attachments: [image001.png](#)
[Rivian Vermont ACCIIACTCommentLetter FINAL.pdf](#)

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To the Agency of Natural Resources,

Rivian Automotive, LLC, is pleased to provide the attached comments in response to the proposed adoption of Chapter 40: Vermont Low Emission Vehicle and Zero Emission Vehicle Rules. Rivian thanks the agency for this opportunity to comment and strongly supports the proposed rules. We have also identified some ways in which Vermont could strengthen the proposed rules, as well as complement them with additional policy actions.

Once again, we thank the agency and staff for this opportunity to provide input and for the hard work and effort that has gone into developing this proposal. Please reach out to me with any questions about Rivian's comments. We look forward to the remainder of the rulemaking process and final adoption of the rules before the end of 2022.

Tom Van Heeke

Senior Policy Advisor, Environmental

P: 641-888-0035 E: tvanheeke@rivian.com



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September 30, 2022

Air Quality and Climate Division
Department of Environmental Conservation
1 National Life Drive—Davis 4
Montpelier, VT 05620-3704

SUBMITTED ELECTRONICALLY TO: anr.declevez@vermont.gov

Re: Proposed Chapter 40: Vermont Low Emission Vehicle and Zero Emission Vehicle Rules

Rivian Automotive, LLC, (“Rivian”) appreciates the opportunity to comment on the proposed adoption by Vermont of the Advanced Clean Cars II (“ACCI”), Advanced Clean Trucks (“ACT”), Low NOx Heavy-Duty Omnibus (“HDO”), and Phase 2 Greenhouse Gas (“GHG”) regulations, to be included in a new Chapter 40 in the Vermont Department of Environmental Conservation Regulations. Rivian strongly supports Vermont’s proposed actions as part of the state’s comprehensive strategy for addressing climate change and improving air quality, consistent with the bold requirements of Act 153, the Global Warming Solutions Act. Vermont continues to demonstrate impressive leadership in these areas with benefits for the state’s transition to a clean technology economy, the climate, and public health. State action on certain complementary policies would only enhance Vermont’s efforts.

Keep the World Adventurous Forever

Founded in 2009, Rivian is an independent U.S. company with more than 14,000 employees worldwide. It is Rivian’s mission to Keep the World Adventurous Forever. Our focus is the design, development, manufacture, and distribution of all-electric adventure vehicles, specifically pickups, sport utility vehicles, and commercial vans. Key to the success of our mission, these vehicles will displace some of the most polluting passenger vehicles and trucks on the road today.

Rivian brought the first electric truck to market last year when we launched the R1T pickup from our manufacturing facility in Normal, Illinois, followed shortly thereafter by the R1S SUV and a commercial fleet electric delivery van for Amazon. All our current vehicles are considered medium duty for regulatory purposes and satisfy ZEV requirements under both the ACCI and ACT rules. The R1T and R1S provide all-electric options in segments where added utility is a necessity. The R1T has an EPA-labeled 314-mile range and 11,000lbs of towing capacity, while the R1S is a seven-passenger full-sized SUV; both are well-equipped to displace the less-capable, yet similar, conventionally powered vehicles. Rivian also offers fleet-focused charging solutions and is building a network of DC fast and Level 2 chargers across the country, including at sites on public lands.

Rivian Strongly Supports Vermont’s Adoption of the Most Stringent Vehicle Emissions Regulations

Rivian’s mission to Keep the World Adventurous Forever is made manifest in its commitment to the environment and addressing climate change. We strongly support programs of ambitious emissions regulation and zero-emission vehicle (ZEV) sales requirements as core to our values and vision for the

world. Implementation of the full suite of standards proposed for Chapter 40 will drive critical reductions in GHG emissions and air pollution in Vermont, while rapidly growing the state's ZEV market. ACCII will fully transition Vermont's passenger vehicle market to 100 percent ZEV new sales by 2035, while the ACT rule will require manufacturers to ensure that more than half of their Class 2b-3 sales, 75 percent of Class 4-8 sales, and 40 percent of Class 7-8 tractor new sales, are ZEVs on the same timeline. Rivian's vehicles meet the requirements of both the ACCII and ACT standards and are proof that these regulations are achievable.

Because of lead-time requirements, it is critical that Vermont act this calendar year to adopt ACCII and ensure implementation beginning in Model Year ("MY") 2026. This is important because the state's existing ZEV requirements will likely become unenforceable when California formally moves into the ACCII program effective with MY2026. At that time, ACCII will supersede California's previous ZEV requirements. Under Section 177 of the Clean Air Act, states must follow identical rules to California or revert to federal standards. Therefore, without timely action Vermont could face a year or more without clean cars regulations, jeopardizing the state's progress and the growth of its EV market. We urge Vermont to finalize the proposed rules this year.

As a vehicle manufacturer, we also want to stress the value of "early credits" under the ACT. Early credits allow EV makers to begin earning compliance credits ahead of the formal regulatory obligation and incentivize accelerated deployment of EVs in the state. Not only does this deliver critical air pollution and greenhouse gas emissions reductions sooner, with important benefits for public health and Vermont's climate goals, but it can help industry grow more quickly to large-scale production and thus move component costs down the cost curve. This is crucial for the long-term success of the industry as well as Vermont's transportation electrification efforts. As currently proposed, Vermont would allow MHD ZEV manufacturers to earn early credits beginning in MY2024. Rivian welcomes this rule provision but to maximize the benefits we strongly encourage a revision to allow early credits beginning in MY2023. MHD ZEVs are available today and Vermont should use every available tool to establish itself as a priority market for those products as early as possible.

While we strongly support adoption of the full package of vehicle emissions standards, we also believe that the scale of the climate challenge and Vermont's emissions reduction targets will require more than these regulations alone. As such, we urge Vermont policymakers to view the proposed rules as the cornerstones of a comprehensive policy approach that will maximize the impact of the state's entire decarbonization agenda. A full suite of coordinated policies and investments is needed to support both vehicle buyers and manufacturers alike to accelerate their transitions to EVs. In addition to the proposed emissions rules, Rivian strongly recommends that Vermont take additional steps including implementing a clean fuels standard (CFS) and establishing durable and effective EV purchase incentives.

To Further Accelerate Transportation Electrification in Vermont, the State Should Consider Complementary Actions to the Vehicle Emissions Rules

While not the subject of this proposal, Vermont should consider complementary actions to strengthen its

approach to reducing emissions from the transportation sector and help deliver on the goals of the regulations currently under consideration. For example, implementing a clean fuels standard (CFS) can create incentives for both EV deployment and use, as well as charging infrastructure investment. Similarly, a streamlined light-duty (“LD”) and MHD rebate program would directly support the purchase of new ZEVs manufactured pursuant to ACT.

Implement a Clean Fuels Standard (CFS)

CFS policies, also known as low carbon fuels standards (LCFS), are powerful enablers of transportation electrification in support of the requirements of the ACCII and ACT regulations.

Several states already establish carbon intensity standards for transportation fuels and many more are actively considering legislation to develop their own. This is a testament to the tremendous value clean fuels policies can deliver, and not just in terms of job creation and economic activity as fuel providers innovate and invest in producing and supplying clean fuels to the market. Just as important, they reduce emissions and are responsible for tens of millions of tons of avoided GHGs and co-pollutants in the states where they are already in force, supporting climate goals as well as improving air quality and public health.¹ Because communities that border major highways and roadways are disproportionately affected by local air pollution caused by vehicles burning fossil fuels, they stand to benefit directly from the use of increasingly clean fuels on those same road networks.

CFS policies also serve to catalyze growth in the EV market. Designed correctly, CFS policies can establish incentive frameworks that encourage automakers to accelerate the development and sale of highly utilized EVs in the policy’s territory while also creating new revenues via the trading of compliance credits that can be used to fund EV purchase rebates or other investments. These policies also typically reward investments in public charging infrastructure.

In the MHD sector, CFS policies create revenue streams that directly support fleet investments in electric vans, trucks, and buses. Under a CFS, when fleets charge vehicles centrally at a depot or dispatching center where they own the charger, they can capture the credits generated by the charging events. Selling those credits in turn generates revenue with direct benefits for total cost of ownership. In this way, CFS programs inherently incentivize MHD fleet-switching and the accompanying charger installation.

Establish Durable and Effective EV Purchase Incentive Programs

Simple and reliable purchase incentives are key to supporting the EV transition in both the LD and MHD sectors. We are not aware of a large-scale MHD ZEV purchase incentive program in Vermont and, unfortunately, the existing LD ZEV rebate suffers from highly restrictive eligibility criteria, including a Manufacturer’s Suggested Retail Price (“MSRP”) cap of \$45,000.² Highly capable EVs like Rivian’s R1T do

¹ Oregon Department of Environmental Quality, Oregon Clean Fuels Program, available at www.oregon.gov/deg/ghgp/cfp/Pages/default.aspx; Casey Kelley and Nikita Pavlenko, The International Council on Clean Transportation, *Working Paper 2020-29: Assessing the potential for low-carbon fuel standards as a mode of electric vehicle support* (December 2020), available at theicct.org/sites/default/files/publications/LCFS-and-EVs-dec2020.pdf.

² <https://www.driveelectricvt.com/incentives/vermont-state-incentives>

come at a price premium. Our truck features a large battery pack designed to deliver the range customers expect across a variety of demanding applications such as towing and off-road driving. AT 135kWh, the battery pack is more than twice the size of those found in typical passenger car offerings such as the Chevrolet Bolt, and 35 percent larger than even SUV-style products like the Tesla Model X. This represents significant added cost. Crucially, electric pickups and SUVs compete directly with some of the most polluting passenger cars on the road today and offer disproportionate climate benefits. If a state decides to impose MSRP caps, Rivian advocates for a tiered approach and establishing a dedicated category for medium-duty vehicles like the R1T with an MSRP cap at least double that used for compact or sedan cars.

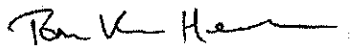
Rivian recommends that Vermont reform its LD ZEV rebate program and implement a MHD ZEV incentive. In our experience, the most effective incentives are simple to understand, available at the point of sale, and broadly accessible to all buyers and for the full cross-section of vehicles drivers want and need. Leading examples include Illinois' LD ZEV rebate and Massachusetts' MOR-EV Trucks Program targeting MHD fleets.

Conclusion

Rivian applauds Vermont's drive to reduce emissions and improve the environment by adopting the ACCII and ACT rules. Our products are proof that now is the time to adopt these regulations. Vermont should also take steps to implement important complementary policies—including implementing a clean fuels standard and ZEV rebates—to maximize the impact of the state's efforts to electrify transportation.

Please contact me with any questions. Rivian looks forward to working with you to accelerate transportation electrification in Vermont.

Sincerely,



Tom Van Heeke
Senior Policy Advisor
Rivian Automotive, LLC
tvanheeke@rivian.com | 641-888-0035

From: Constance West
To: O'Toole, Megan
Subject: Public Comment on advanced Clean Cars and Advanced Clean Trucks rule
Date: Wednesday, August 31, 2022 3:53:21 PM

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

I unfortunately cannot attend the public hearings on this important rule. I would like to submit a comment on this ruling.

I heartily support this rule to require automakers to deliver more zero-emission electric vehicles to Vermont with the ultimate requirement for all new vehicles to be zero emission by 2035.

Transportation in our rural state creates too much of our carbon emissions, we need to reduce this substantially. I have just myself transitioned to an all electric vehicle. I cannot state how easy it is. And with more and more electric cars coming into the state it will only get easier and easier. We will not be doing this alone. With the large state of California moving this way, we will be able to have auto manufacturers meet this requirement easily.

In 2035 I will be 87 years old. I want to see our beautiful state lead the way to zero emissions. This is one way to help significantly.

Thank you,

Constance West
181 Equinox Pond Road
Manchester, VT 05254

From: [Julia Riell](#)
To: [O'Toole, Megan](#)
Subject: Public comment on availability of zero-emissions vehicles law.
Date: Friday, September 30, 2022 2:13:23 PM

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Please PASS the Advanced Clean Cars II & Advanced Clean Trucks rules. Transportation is the single largest contributor to climate pollution in Vermont, but Vermonters have struggled to find zero-emissions vehicles in sufficient numbers to meet demand.

We need these vehicles to begin the work - especially buses!

Thank you for your time,

--

Julia W. Riell

(c) 802-287-0852

julia.wood.riell@gmail.com

From: [KCN](#)
To: [O'Toole, Megan](#)
Subject: public comment on clean vehicles
Date: Wednesday, September 28, 2022 4:28:55 PM

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Dear Friends at the Vermont Agency of Natural Resources:

I support rules that would expand access to zero-emission vehicles in Vermont. This is important to me and to the future I want to help shape for my children and grandchildren.

Please do what you can to make these rules a reality.

Karen Campbell-Nelson

Montpelier, VT

From: [Thad Kurowski](#)
To: [ANR - DEC Lev Zev](#)
Subject: Public Comment on Proposed Regulations ACT/LEV/ZEV/Etc.
Date: Thursday, September 29, 2022 4:40:30 PM
Attachments: [image001.png](#)
[image002.png](#)
[image003.png](#)
[image004.png](#)
[220929 Tesla VT ACT ACCII FINAL Comments.pdf](#)

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On behalf of Tesla, please accept the attached comments in support of adopting the proposed Advanced Clean Cars II, Advanced Clean Truck, Low-NOx Heavy Duty Omnibus, and Phase 2 Greenhouse Gas Regulations.

Thank you,

**Thad Kurowski | National Credit Trading & Intermountain West State Policy Lead
| Public Policy and Business Development
m. +1 (303) 868-3102 | tkurowski@tesla.com**

T E S L A

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September 29, 2022

Submitted electronically at: anr.declevzev@vermont.gov

State of Vermont Agency of Natural Resources
Department of Environmental Conservation
Air Quality and Climate Division
1 National Life Drive – Davis 4
Montpelier, VT 05620-3704

Re: Comments on the Proposed Advanced Clean Cars II, Advanced Clean Truck, Low-NOx Heavy Duty Omnibus, and Phase 2 Greenhouse Gas Regulations

Dear Director Hales,

Pursuant to the State of Vermont Agency of Natural Resources (ANR) proposed amendments to air pollution control regulations, **Tesla respectfully submits the following comments in support of adopting Advanced Clean Cars II (ACCII), Advanced Clean Truck (ACT), Low-NOx Heavy Duty Omnibus (HDO) and Phase 2 Greenhouse Gas Regulations.**

As an active participant in the California Air Resources Board (CARB) HDO, ACT, ACCII and ZEP rulemakings, Tesla supports expansion of the regulations by the state of Vermont.¹ Tesla believes the pace of electric vehicle innovation, cost-reduction, and deployment coupled with the public health and welfare imperatives to address criteria air pollution and accelerating impacts of climate change support adoption of each of the proposed policy amendments.

Tesla's Approach to Emissions Mitigation

Tesla's mission is to accelerate the world's transition to sustainable energy. Moreover, Tesla believes the world will not be able to solve the climate change crisis without directly reducing air pollutant emissions—including carbon dioxide (CO₂) and other greenhouse gases (GHGs)—from the transportation and power sectors.

To accomplish its mission, Tesla designs, develops, manufactures, and sells high-performance fully electric vehicles and energy generation and storage systems, installs, and maintains such systems, and sells solar electricity. Tesla currently produces and sells four fully electric, zero emissions light duty vehicles (ZEVs): The Model S sedan, the Model X sport utility vehicle (SUV), the Model 3 sedan, and the Model Y mid-sized SUV. In addition, Tesla has announced plans to produce the Cybertruck (pickup truck) and the Semi (Class 8 truck) in volume in 2023. As an EV-only manufacturer, EPA recognized in its *2021 Automotive Trends Report* that Tesla had by far the lowest carbon dioxide emissions (0 g/mi) and highest fuel economy (119 miles per gallon equivalent) of all large vehicle manufacturers in MY 2020.²

¹ See e.g., Tesla Comments on the HDO regulation (Aug. 25, 2020) available at <https://ww2.arb.ca.gov/applications/public-comments?p=comm&s=bccommlog&l=hdomnibus2020>; Tesla Comments on the ACT regulation (Dec. 9, 2019) available at <https://ww2.arb.ca.gov/applications/public-comments?p=comm&s=bccommlog&l=act2019>; Tesla Comments on ZEP Certification regulations (Feb. 15, 2019) available at: <https://ww2.arb.ca.gov/applications/public-comments?p=comm&s=bccommlog&l=zepcert2019>

² EPA, [The 2021 EPA Automotive Trends Report, Greenhouse Gas Emissions, Fuel Economy, and Technology Since 1975](#) at 13 (Nov. 2021) (preliminary MY 2021 at 125.7 miles per gallon).

Tesla is also deeply committed to ensuring the U.S. remains a leader in advanced manufacturing.³ All Tesla vehicles sold in North America are manufactured in the U.S. In 2022, the Tesla Model Y ranked as the most American-made car, based on overall contributions to the U.S. economy, and the Model 3 ranked just below as the second most American made car on the market.⁴ NHTSA similarly confirms that 100% of the vehicle, engine, and transmission assembly in each Tesla vehicle sold in the U.S. occurs in the U.S.⁵ In addition, Tesla's U.S. supply chain continues to expand and spans across more than 40 states, including Alabama, Georgia, Ohio, Indiana, and Michigan.⁶

Tesla has continued a remarkable period of growth and scale based precisely on its advanced technology vehicle product offerings. In the U.S., Tesla conducts vehicle manufacturing and assembly operations at its factory in Fremont, CA, and produces electric drive trains and manufactures advanced battery packs, as well as Tesla's energy storage products, at its Gigafactory Nevada in Sparks, NV. Tesla also builds and services highly automated, high-volume manufacturing machinery at its facility in Brooklyn Park, MN, and operates a tool and die facility in Grand Rapids, MI.⁷ Tesla produces solar energy and vehicle charging products, including manufacturing of its DC-fast charging equipment for heavy duty vehicles, at its Gigafactory New York in Buffalo, NY.

In the spring of 2022, Tesla began production of Model Y vehicles at its newest vehicle and advanced battery manufacturing facility in Austin, TX. The project will invest over \$10B in factory development and create 20,000 new jobs.⁸ Upon full completion, the Gigafactory Texas will produce Tesla's new Cybertruck and Model Y crossover, and manufacture Tesla's new, advanced 4680 lithium-ion battery cell and battery packs.⁹ Globally, by 2030, Tesla aims to sell 20 million electric vehicles per year.¹⁰

Heavy Duty Trucking: Tesla's Full Electric Class 8 Truck – the Tesla Semi¹¹

In 2017, Tesla introduced the Tesla Semi to the world, a Class 8 truck designed from the ground up to be the most efficient and safest truck on the market. The Tesla Semi represents an opportunity to have an outsized impact on reducing NOx and GHG emissions from goods movement and transportation. The Semi comes in two models, with ranges of 300 and 500 miles respectively, and will demonstrate that an all-electric truck can meet virtually any duty cycle when paired with the Semi Charging system that Tesla is developing. Tesla recently announced that deliveries of the long range Semi would begin in 2022.¹²

Combination trucks –of which the vast majority are semi-trucks –in the U.S. account for just 1.1% of the total fleet of vehicles on the road. That said, because combination trucks have high fuel consumption due to their

³ See generally, Tesla, [Impact Report 2021](#) (May 6, 2022).

⁴ Cars.com, [Cars.com's American-Made Index Adds Tesla to Exclusive List of Multiyear Chart-Toppers, Model Y Nabs No. 1](#) (June 21, 2022); See also, Cars.com, [Tesla Model 3 Snags No. 1 Spot on Cars.com's 2021 American-Made Index](#); First All-Electric Vehicle to Top the List in Its 16-Year History (June 23, 2021); American University, Kogod School of Business, [2021 Made in America Index](#) (Oct. 15, 2021) (Finding in 2021, each of Tesla's vehicles - the Model S, 3, X and Y - ranked in the top 10 and Tesla was the only manufacturers to have representation from its entire portfolio in the top 10.).

⁵ NHTSA, [Technical Support Document: Proposed Rulemaking for Model Years 2024-2026 Light Duty Vehicle Corporate Average Fuel Economy Standards](#) (Aug. 2021) at 96, Table 2-6.

⁶ See e.g., AutoNews, [Suppliers Starting to Set Stage for Tesla in Texas](#) (Sept. 5, 2021).

⁷ See Tesla, [Manufacturing: Build a Sustainable Future](#).

⁸ See, e.g., KXAN/Austin Business Journal, [Musk teases huge job number at Austin-area Tesla factory](#) (Dec. 20, 2021); Reuters, [Musk says Tesla's Texas factory is \\$10 bln investment over time](#) (Dec. 15, 2021).

⁹ See Tesla, [Tesla Battery Day Presentation](#) (Sept. 22, 2020).

¹⁰ Tesla, [Impact Report 2020](#) (Aug. 10, 2021) at 2.

¹¹ See Tesla, [Semi](#).

¹² See, Seeking Alpha, [Elon Musk tweets Tesla Semi 500-range variant starts shipping this year](#), (Aug. 10, 2022).

weight and heavy utilization, they account for approximately 18% of all U.S. vehicle emissions. Electrifying the heavy-duty truck segment is an essential part of transitioning the world to sustainable energy.

With both the U.S. and E.U. having approved higher weight allowances for electric heavy-duty trucks, Tesla expects the payload to be at least as high as it would be for a diesel truck. In the E.U., electric semi-trucks are permitted to be 2 tons (~4,400 pounds) heavier than diesel equivalents, and in the U.S. the allowance is 0.9 tons (2,000 pounds). When fully loaded, the Tesla Semi should have over 500 miles of range, achieved through aerodynamics and highly efficient motors, and be able to reach an efficiency of less than 2 kWh/mile.¹³

Since unveiling the Tesla Semi, a significant number of fleets with substantial freight needs have placed reservations for the truck, indicating broad industry demand for heavy-duty electric vehicles.¹⁴ These fleets will be deploying the Tesla Semi in a wide range of applications, including but not limited to, manufacturing, retail, grocery and food distribution, package delivery, dedicated trucking, rental services, intermodal, drayage, and other applications. Companies with operations throughout North America representing every major trucking sector and category of the economy have reserved the Tesla Semi, ranging from food service to logistics to retail.

The reason for this strong interest is clear – the economics of electrified heavy-duty vehicles are incredibly compelling for end-users, particularly sophisticated and economically rational operators. Tesla estimates that the time to recoup the investment in a Tesla Semi, given the operational savings it provides customers, will be faster compared to a conventional diesel truck. With the per mile operational costs being so much cheaper than diesel trucks, economic minded operators will maximize the use of their electric trucks and quickly expand the number of electric trucks in their fleets.

Furthermore, by removing diesel from the heavy-duty equation altogether, battery electric trucks like the Tesla Semi represent a superior solution relative to other approaches that seek to reduce NOx emissions by increasing the efficiency of diesel trucks or via post-combustion treatment. As one recent analysis recognized, fully addressing harmful air pollution from trucks used in urban and community areas by 2035 and eliminating pollution from all new trucks and buses by 2040, can provide tremendous public health and welfare benefits, including preventing 57,000 premature deaths by 2050, reducing NOx emission by more than 10M tons, eliminating almost 200,000 tons of PM by 2050, and avoiding 4.7B tons of GHG emissions.¹⁵

Tesla supports ANR proposed regulations

Tesla supports the development and adoption of strong state vehicle NOx, GHG emissions performance standards and LEV/ZEV standards for light to heavy duty vehicles. For many years, these standards have helped drive investment in electric vehicle manufacturing and technology because those performance standards incentivize manufacturing vehicles with zero tailpipe emissions and provide a mechanism by which vehicle manufacturers that deploy innovative technologies and out-perform the standards are rewarded as they can earn and sell tradeable compliance credits.¹⁶

To that end, the HDO, ACT, and ACCII rules provide new additions to Vermont's comprehensive air pollution mitigation strategy that ensure pollution reduction, increased deployment of emission reduction technology,

¹³ *Id.*

¹⁴ See e.g., Yahoo Finance, [Tesla Gets Order For 150 Semi Trucks from Canadian Company As It Prepares For 'Volume Production'](#) (Nov. 5, 2020); The Street, [Walmart Triples-Down on Tesla Semi Reservations](#) (Sept. 29, 2020); Business Insider, [Tesla has a new customer for its electric Semi — here are all the companies that have ordered the big rig](#) (Apr. 25, 2018).

¹⁵ Environmental Defense Fund, [Clean Trucks, Clean Air, American Jobs](#) (Mar. 4, 2021) at 1.

¹⁶ See, e.g., Virginia McConnell, Benjamin Leard & Fred Kardos, Resources for the Future, [California's Evolving Zero Emission Vehicle Program: Pulling New Technology into the Market](#) at 22-31 (Nov. 2019). (California state Zero Emissions Vehicle credit banking and trading).

and facilitation of increased investment for the portion of the motor vehicle sector that needs it most, by fostering technological innovation in ZEV manufacturing.

Indeed, the public health, climate, and economic benefits from reducing heavy-duty NOx and GHG emissions cannot be overstated. Air pollution is estimated to cause over 200,000 premature deaths in the U.S. each year; with more than half caused by transportation emissions.¹⁷ Recent findings indicate that the U.S. health care costs from air pollution and climate change exceed \$800 billion per year.¹⁸ Air pollution impacts from pollutants like PM2.5 that are associated with the medium- and heavy-duty sector not only cause premature mortality, cardiovascular disease and respiratory disease but also can affect neurological disorders.¹⁹ Other studies suggest that exacerbation of air pollution and heat exposure related to climate change may be significantly associated with risk to pregnancy outcomes in the U.S.²⁰ The International Council on Clean Transportation recently updated the Vermont-specific analysis they did looking at the benefits of adopting California's vehicle standards.²¹ The study found that by adopting ACT, HDO and Phase 2 GHG rules Vermont would reduce NOx emissions by 7,820 U.S. tons, PM2.5 by 44 U.S. tons, and CO2e by 6.17MMT.

These negative effects of air pollution disproportionately harm the most vulnerable populations, including children, the elderly, and residents in low-income and disadvantaged communities.²² Indeed, two-thirds of Americans who live near high-volume roads are people of color and the median household income in these communities is roughly 20% below the national average.²³ Emissions from heavy-duty diesel trucks are roughly the equivalent to those of 20 to 55 light-duty vehicles on the road. Repeatedly, peer reviewed, government and inter-governmental studies point toward electrification as key to addressing criteria air pollutants, improving air quality, and lowering the risk of respiratory illness.²⁴

The American Lung Association (ALA) recently estimated that wide-spread transportation electrification across the United States translates into \$72 billion in avoided adverse health effects. Electrification would save approximately 6,300 lives per year and avoid more than 93,000 asthma attacks, and 416,000 lost workdays annually due to significant reductions in transportation-related pollution.²⁵ Other studies have found dramatic localized air quality and public health benefits will result for electrifying the heavy-duty fleet.²⁶

¹⁷ Atmospheric Environment, [Air pollution and early deaths in the United States. Part I: Quantifying the impact of major sectors in 2005](#) (Nov. 2013); See also, PNAS, [Fine-scale damage estimates of particulate matter air pollution reveal opportunities for location-specific mitigation of emissions](#) (April 8, 2019) (Over 100,000 premature death just from PM 2.5).

¹⁸ Medical Society Consortium, [The Costs of Inaction: The Economic Burden of Fossil Fuels and Climate Change on Health in the United States](#) (May 20, 2021).

¹⁹ The Lancet, [Long-term effects of PM_{2.5} on neurological disorders in the American Medicare population: a longitudinal cohort study](#) (Oct. 19, 2020).

²⁰ Bekkar, et al. JAMA Open Network, [Association of Air Pollution and Heat Exposure with Preterm Birth, Low Birth Weight, and Stillbirth in the USA Systematic Review](#) (June 18, 2020).

²¹ See <https://theicct.org/wp-content/uploads/2022/09/HDV-fact-sheet-VT-092122.pdf> (Sept. 2022)

²² U.N. Environmental Programme, [Young and old, air pollution affects the most vulnerable](#) (Oct. 16, 2018).

²³ Union of Concerned Scientists, [Delivering Opportunity: How Electric Buses and Trucks Can Create Jobs and Improve Public Health in California](#), (Oct. 11, 2016), at 10.

²⁴ See e.g., International Panel on Climate Change (IPCC), [AR 6 Climate Change 2022: Impacts, Adaptation and Vulnerability](#) (Feb. 28, 2022) at 7-120; USGCRP, [National Climate Assessment 4, Volume II, Chapter 29 at Box 29.2](#) (In transportation, for example, switching away from petroleum to potentially lower GHG fuels, such as electricity and hydrogen, is projected to reduce local air pollution. In California, drastic GHG emissions reductions have been estimated to substantially improve air quality and reduce local particulate matter emissions associated with freight transport that disproportionately impact disadvantaged communities").

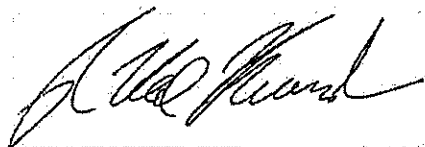
²⁵ American Lung Assoc., [The Road to Clean Air Benefits of a Nationwide Transition to Electric Vehicles](#) (Mar. 31, 2022) at 5-6. See also, ZETA, [Medium- and Heavy Duty Electrification: Weighing the Opportunities and Barriers to Zero Emission Fleets](#) (Jan. 26, 2022) at 8-9.

²⁶ See, Texas A&M, [Tailpipe Emission Benefits of Medium- and Heavy-Duty Truck Electrification in Houston, TX](#) (Apr. 14, 2021) (Finding that by electrifying 40% of the predominantly diesel-fueled MHDVs in the eight-county area, Texans could

Conclusion

For the reasons set forth above, ANR should adopt the proposed regulations, reducing criteria and greenhouse gas air pollutants, and protecting the public health and welfare of Vermont's residents.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "Thad Kurowski", written over a faint dotted line.

Thad Kurowski
Senior Policy Advisor
Public Policy & Business Development

avoid 21 tons per day of NO_x — over a quarter of the 80 tons per day emitted by greater Houston's on-road traffic. This could be achieved by electrifying a little over 60,000 MHDVs, about 1% of all the vehicles in greater Houston. By comparison, it would take 3.8 million light duty vehicles to achieve the same amount of NO_x reductions. Electrification of MHDVs is the quickest way to take the biggest bite out of greater Houston's NO_x emissions.)

From: [Laura Cavin Bailey](#)
To: [ANR - DEC Lev Zev](#)
Subject: Public Comment
Date: Thursday, September 29, 2022 7:26:12 PM

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

To whom it may concern

I am in full support of clean cars II to reduce our states transportation emissions and to ensure future access to electric cars in Vermont.

We need to act and we need legislation that pushes car manufacturers to supply EVs.

Laura bailey
Fayston

--

Laura Cavin Bailey (she/her)
Architect, [Certified Passive House Consultant](#), [SEED](#)
802.233.6723

From: [Christine Fleming](#)
To: [O'Toole, Megan](#)
Subject: Public Comment: Advanced Clean Cars II & Advanced Clean Trucks rules
Date: Friday, September 23, 2022 6:00:25 PM

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

Dear Megan O'Toole,

I am writing to express my support for passing the Advanced Clean Cars II & Advanced Clean Trucks rules. As I'm sure you know, it is essential that we do everything we can to limit the release of greenhouse gases into the atmosphere, and reducing emissions from cars is a highly effective way to do this. Vermont is a state where traveling by car is practically a necessity. There have been times when I've tried to visit my friends across the state and wished that I could travel via bike or public transportation, but traveling across the state by bike isn't feasible and in many cases, public transportation doesn't exist.

It would be amazing to live in a world where access to an electric car is possible for every Vermonter. Not only would this help Vermont and the world by slowing the effects of climate change, it would help people who purchase electric cars by showing them personally how they can do something to help solve this enormously pressing issue. In this way, Vermont can be a model for the rest of the U.S. in combating climate change. Once again, I urge you to please pass the Advanced Clean Cars II & Advanced Clean Trucks rules.

Thank you,

Christine Fleming
University of Vermont, class of 2023
B.S. in Environmental Science

From: courtney.rae.forti@gmail.com
To: [O'Toole, Megan](#)
Subject: Public Comment: Advanced Clean Cars II & Advanced Clean Trucks rules
Date: Wednesday, September 28, 2022 10:34:31 PM

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

Hi there,

I am writing today as a Vermonter and mother living in Cambridge, VT. I support the state in moving forward with these rules and helping Vermonters access clean transportation in a more affordable way. As a parent, I feel extreme and constant worry about the climate crisis and the impact it is currently having which will only intensify if not addressed with radical reductions in emissions and environmental degradation. Three months after the birth of my daughter, The UN issues a "Code Red for Humanity" based on the data collected by the IPCC which spelled out in no uncertain terms that human civilization and survival are at risk if we don't drastically and quickly change our behaviors around fossil fuels and how we treat the environment. Though Vermont is small, it has the potential to influence other states and entities by leading by example and making bold moves to protect our children's future. These changes will also help Vermont families save significant money on fuel and transportation which will help boost our local economies and overall benefit our way of life.

Thank you for your consideration.

Warmly,

Courtney Forti
she/her/hers
617-833-8968

"There's a song that wants to sing itself through us. We just got to be available. Maybe the song that is to be sung through us is the most beautiful requiem for an irreplaceable planet or maybe it's a song of joyous rebirth as we create a new culture that doesn't destroy its world. But in any case, there's absolutely no excuse for our making our passionate love for our world dependent on what we think of its degree of health, whether we think it's going to go on forever. Those are just thoughts anyway. But this moment you're alive, so you can just dial up the magic of that at any time." - Joanna Macy

From: [Robb Kidd](#)
To: [O'Toole, Megan](#)
Subject: Public Comment: Sierra Club Member petition
Date: Friday, September 30, 2022 11:58:13 AM
Attachments: [ACC II and ACT Sierra Club Member Petition.pdf](#)
[Clean Car Petitions.xlsx](#)

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

Dear Megan O'Toole,

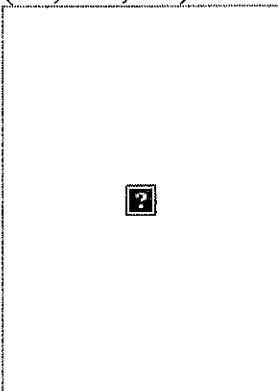
Please accept the attached petition signed by one hundred Vermonter Sierra Club members in support of the Advanced Clean Trucks, Advanced Clean Cars II, and Heavy Duty Omnibus rules.

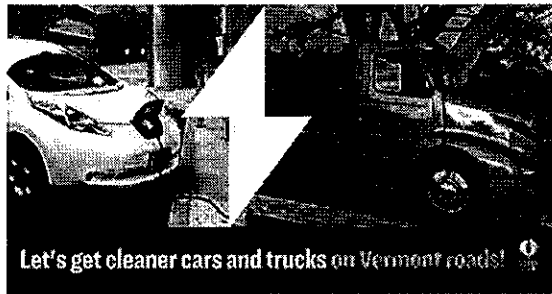
I included the attached pdf file that includes the petition language with the signatories and their town of residence. I also include an excel sheet with the contact information for the signatories if the Agency of Natural Resources needs to follow up with information.

The Sierra Club appreciates the considerations of the Agency of Natural Resources in adopting these rules this year.

Sincerely,
Robb Kidd

Robb Kidd
Sierra Club
Vermont Conservation Program Manager
(802)505-1540
(He, Him, His)





Agency of Natural Resources Central Office
1 National Life Drive
Davis 2
Montpelier VT 05620-3901

September 30, 2022

Subject: Public Comment: Advanced Clean Trucks, Advanced Clean Cars II, and Heavy Duty Omnibus rules

Dear Governor Phil Scott and Vermont Agency of Natural Resources,

I am writing today to urge Vermont to adopt the strongest possible vehicle standards for the Advanced Clean Trucks, Advanced Clean Cars II, and Heavy Duty Omnibus rules. Far too many of us are experiencing the impacts of climate change which threaten the livelihood of our state and communities, and we must act now to protect our climate and health by passing these standards which will reduce climate-disrupting and toxic emissions.

States across the country are adopting vehicle standards for cars, trucks, and buses. Vermont must do the same since these rules are essential to fighting the climate crisis and protecting our communities.

Thank you for your leadership and for taking action.

Submitted by Robb Kidd, Vermont Sierra Club, Montpelier, Vermont

Electronically signed by:

Anne Jameson	Marshfield	VT
Martha Adams	Bellows Falls	VT
Susan Schulman	Hinesburg	VT
Nathan Irons	Shelburne	VT
Marc Benowitz	Weston	VT
Wayne Senville	South Burlington	VT
Penelope Tompkins	South Burlington	VT
Jerry Leblond	Rochester	VT
Jim Hand	East Dorset	VT
Madeleine Wennerstrom	Randolph	VT

Jarryd Audette	Underhill	VT
Charles Monette	Brattleboro	VT
SharonGoedkoop	Wilder	VT
Lisa Pistilli	Middlebury	VT
Janice McCann	Rochester	VT
Elianne Wijler Klinefelter	Williston	VT
Amy Payne	Burlington	VT
Cecil Hall	Danville	VT
Donald Lenz	Plainfield	VT
Eric Weller	Bridgewater Corners	VT
Jeff Gold	Danville	VT
Mary Mcdaniel	Northfield	VT
F Corr	Guilford	VT
Paula Duprat	Sharon	VT
Suzanne Murphey	Stowe	VT
Charles Murphy	Manchester	VT
Jim Fredericks	Greensboro	VT
Robert McMullin	Moretown	VT
John Lamperti	Norwich	VT
Colin Sturgess	Essex Junction	VT
Phoebe Bright Knox	Cummin	Huntington VT
Lesley Heathcote	Brattleboro	VT
Angel Gray	Poultney	VT
Jessica Gibb	Jacksonville	VT
Marcia Levin	Bennington	VT
Thomas Deboni	Windsor	VT
Katherine Werner	Waitsfield	VT
Courtney Dobyys	Norwich	VT
Mark Gannett	South Burlington	VT
KristineWinnicki	Chester	VT
Melinda Meyerhoff	Thetford Center	VT
Garret Hobart	South Royalton	VT
Wally Elton	Middlebury	VT
Ann Randall	Manchester Center	VT
Janice Solektefft	Underhill	VT
Donald Lenz	Plainfield	VT
Bonnie Hearthstone	Vergennes	VT
Kevin Sherry	Middlebury	VT
Peter Grant	Bristol	VT
Phyllis Newbeck	Jericho	VT
Steven Diccico	Hyde Park	VT
Ray Gonda	South Burlington	VT
Chris Miller	North Hero	VT
Scott Holliman	Middletown Springs	VT

Cadence Genereaux	White River Junction	VT
Sue Rasmussen	Whiting	VT
Linda Gray	Norwich	VT
Callie Willis	Warren	VT
Beth Hartmann	Charlotte	VT
Daniel Green	East Montpelier	VT
Dave Goodlin	Morrisville	VT
Erik Mueller-Harder	Cabot	VT
Wendy Manganiello	Norwich	VT
Charlotte Bill	Enosburg Falls	VT
Lori Keene	Shelburne	VT
Lindzey Beal	Wolcott	VT
Carl Bucholt	MANCHESTER CENTER	VT
Hugh Mccaslin	Burlington	VT
Kate Goetz	West Burke	VT
Marla Simpson	Randolph	VT
BarbaraBloom	South Hero	VT
Anne Dolivo	Manchester Center	VT
Vivian Ross	Middlebury	VT
Susan Scandinaro	Bennington	VT
Randi Hacker	Montpelier	VT
MarilynBirkett	Windsor	VT
Sue and John Morris	Marshfield	VT
Tom Cate	Montpelier	VT
Debora Tramposh	Brattleboro	VT
Don & Mary Faulkner	Montpelier	VT
Tom Brassard	South Burlington	VT
Deborah Hawkins	Shoreham	VT
Kevin Thorley	Williston	VT
MichelleKaufman	Rutland	VT
Matthew LeFluer	Alburgh	VT
Richard Butz	Bristol	VT
Gail Butz	Bristol	VT
Scott Weathers	Stowe	VT
Barbara Huibregtse	DANVILLE	VT
NathanielShoaff	Montpelier	VT
MarilynMcEnery	Danville	VT
Martin Maitner	South Burlington	VT
Don Smith	Saint Johnsbury	VT
Linda Cooper	Burlington	VT
Lois Helland	Burlington	VT
Karl Kemnitzer	Hartland	VT
Lori Keene	Shelburne	VT
Joan Hoffmann	So Royalton	VT

Contact: Full Name	Email	First Name	Last Name
Anne Jameson	annejameson@yahoo.com	Anne	Jameson
Martha Adams	martha.adams60@gmail.com	Martha	Adams
Susan Schulman	sueschulman23@gmail.com	Susan	Schulman
Nathan Irons	nathan.irons@bluestonelife.com	Nathan	Irons
Marc Benowitz	mhenowitz@hotmail.com	Marc	Benowitz
Wayne Senville	wsenville@gmail.com	Wayne	Senville
Penelope Tompkins	mittagmichael@gmail.com	Penelope	Tompkins
Jerry Leblond	jerryleblond@gmail.com	Jerry	Leblond
Jim Hand	jimehand@gmail.com	Jim	Hand
Madeleine Wennerstrom	capenana08@gmail.com	Madeleine	Wennerstrom
Jarryd Audette	hasty.floaty_0p@icloud.com	Jarryd	Audette
Charles Monette	cmonette76@gmail.com	Charles	Monette
Sharon Goedkoop	sharon.goedkoop@gmail.com	Sharon	Goedkoop
Lisa Pistilli	david.pistilli@me.com	Lisa	Pistilli
Janice McCann	janmccann68@gmail.com	Janice	McCann
Elianne Wijler Klinefelter	elianne.wijler@gmail.com	Elianne	Wijler Klinefelter
Amy Payne	amyepayne@gmail.com	Amy	Payne
Cecil Hall	hall.cecil@gmail.com	Cecil	Hall
Donald Lenz	lightninglenz@gmail.com	Donald	Lenz
Eric Weller	freeski52@gmail.com	Eric	Weller
Jeff Gold	jnegold@charter.net	Jeff	Gold

Mary Mcdaniel	mwm1284r@gmail.com	Mary	Mcdaniel
F Corr	newhotar@gmail.com	F	Corr
Paula Duprat	pduprat@myfairpoint.net	Paula	Duprat
Suzanne Murphey	kellymurphey@aol.com	Suzanne	Murphey
Charles Murphy	chic7@comcast.net	Charles	Murphy
Jim Fredericks	jimfredericks2@gmail.com	Jim	Fredericks
Robert McMullin	mac@gmavt.net	Robert	McMullin
John Lamperti	j.lamperti@dartmouth.edu	John	Lamperti
Colin Sturgess	cns9498@aol.com	Colin	Sturgess
Phoebe Bright Knox Cummin	knoxo@aol.com	Phoebe Bright	Knox Cummin
Lesley Heathcote	lesley.heathcote@gmail.com	Lesley	Heathcote
Angel Gray	arb1625@yahoo.com	Angel	Gray
Jessica Gibb	habitat8@myfairpoint.net	Jessica	Gibb
Marcia Levin	levin.marcia08@gmail.com	Marcia	Levin
Thomas Deboni	tmd913@comcast.net	Thomas	Deboni
Katherine Werner	kwerner@gmavt.net	Katherine	Werner
Courtney Dobyys	cdobyys1@myfairpoint.net	Courtney	Dobyys
Mark Gannett	mgannett914@comcast.net	Mark	Gannett
Kristine Winnicki	kwinnicki@hotmail.com	Kristine	Winnicki
Melinda Meyerhoff	melinda229@gmail.com	Melinda	Meyerhoff
Garret Hobart	hobartg@msn.com	Garret	Hobart
Wally Elton	wally.elton@earthlink.net	Wally	Elton

Ann Randall	annlorene@gmail.com	Ann	Randall
Janice Solektefft Donald Lenz	jst05489@gmail.com lightninglenz@gmail.com	Janice Donald	Solektefft Lenz
Bonnie Hearthstone	bhearthstone@yahoo.com	Bonnie	Hearthstone
Kevin Sherry	kevin.sherry@compass.com	Kevin	Sherry
Peter Grant	pwgrant123@gmail.com	Peter	Grant
Phyllis Newbeck	vtphyl72@gmail.com	Phyllis	Newbeck
Steven Dicicco	steved518@aol.com	Steven	Dicicco
Ray Gonda	gonda05403@yahoo.com	Ray	Gonda
Chris Miller	cmiller081774@gmail.com	Chris	Miller
Scott Holliman	seholliman@gmail.com	Scott	Holliman
Cadence Genereaux Sue Rasmussen	sugar.genereaux@gmail.com llamasue2@gmail.com	Cadence Sue	Genereaux Rasmussen
Linda Gray	linda.c.gray@gmail.com	Linda	Gray
Callie Willis	cwillis@gmavt.net	Callie	Willis
Beth Hartmann	bhartmann@gmavt.net	Beth	Hartmann
Daniel Green	dhgreen@comcast.net	Daniel	Green
Dave Goodlin	woodmanvt2@gmail.com	Dave	Goodlin
Erik Mueller-Harder	karen@praxisworks.org	Erik	Mueller-Harder
Wendy Manganiello	wendy.manganiello@gmail.com	Wendy	Manganiello
Charlotte Bill Lori Keene	cgbill@gmail.com loricrossroads4@gmail.com	Charlotte Lori	Bill Keene
Lindzey Beal	lindzeyp86@gmail.com	Lindzey	Beal

Carl Bucholt	carl.bucholt@comcast.net	Carl	Bucholt
Hugh Mccaslin	hugh.mccaslin@gmail.com	Hugh	Mccaslin
Kate Goetz	kgardnergoetz@hotmail.com	Kate	Goetz
marla simpson	marla@pathwaysvermont.org	marla	simpson
Barbara Bloom	bloom@champlain.edu	Barbara	Bloom
Anne Dolivo	dolivoanne@gmail.com	Anne	Dolivo
Vivian Ross	vivianrossvt@gmail.com	Vivian	Ross
Susan Scandinaro	susanscandinaro@aol.com	Susan	Scandinaro
Randi Hacker	tweenmom@gmail.com	Randi	Hacker
Marilyn Birkett	veinard22@gmail.com	Marilyn	Birkett
Sue and John Morris	mamasuepeace@gmail.com	Sue and John	Morris
Tom Cate	tomcate360@gmail.com	Tom	Cate
Debora Tramposh	dtramposh@gmail.com	Debora	Tramposh
Don & Mary Faulkner	dmf633@gmail.com	Don & Mary	Faulkner
Tom Brassard	tjb911rs@gmail.com	Tom	Brassard
Deborah Hawkins	thehawk6767@yahoo.com	Deborah	Hawkins
Kevin Thorley Michelle Kaufman	elron8711@gmail.com marsupigal@aol.com	Kevin Michelle	Thorley Kaufman
Matthew Lefluer	matthewlefluer89@yahoo.com	Matthew	LeFluer
Richard Butz	butzra042@gmail.com	Richard	Butz
Gail Butz	butzra042@gmail.com	Gail	Butz
Scott Weathers	scott.weathers@mail.harvard.edu	Scott	Weathers

Barbara Huibregtse	bh54189@gmail.com	barbara	Huibregtse
Nathaniel Shoaff	nathaniel.shoaff@gmail.com	Nathaniel	Shoaff
Marilyn McEnery	marilynmcenery48@gmail.com	Marilyn	McEnery
Martin Maitner	mottyski82@gmail.com	Martin	Maitner
Don Smith	dreamers2it@hotmail.com	Don	Smith
Linda Cooper	flatlanderalso@gmail.com	Linda	Cooper
Lois Helland	hellanla@uwec.edu	Lois	Helland
Karl Kemnitzer	kkemvt@gmail.com	Karl	Kemnitzer
Lori Keene	loricrossroads4@gmail.com	Lori	Keene
Joan Hoffmann	hoffmann.joan@gmail.com	joan	hoffmann
		Robb	Kidd

From: [Peter James](#)
To: [ANR - DEC Lev Zev](#)
Subject: Public Comments on proposal to ban sale of new internal combustion vehicles in 2035 in Vermont
Date: Friday, September 30, 2022 8:39:08 AM

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Folks,

I learned about this from a Vermont Public article yesterday: <https://www.vermontpublic.org/local-news/2022-09-29/vermont-is-weighing-new-rules-to-require-car-truck-manufacturers-to-supply-more-electric-vehicles-to-the-state> My comments are based on that article; I have not read these proposed rules in detail.

I will be brief.

I hope global warming gets fixed; I hope electric vehicles are successful and by 2035, we are all able to cheaply buy long-range EVs that charge quickly. I also hope the electric grid will be ready for large numbers of people charging their electric vehicles in 2035 and before. I don't want nasty storms like Hurricane Ian or Tropical Storm Irene in 2011 to harm us, so again, I do want global warming to be dealt with.

That said, I am opposed to banning the sale of new internal combustion engine vehicles in Vermont in 2035 because it limits people's options. Even if people say, "Oh, Vermonters mostly buy used vehicles, it won't affect us", it still limits people's options. If what I hope happens does happen, EVs will be so great that such a rule is not needed. If what I hope happens doesn't happen, and the Vermont electric grid can't support hundreds of thousands of electric vehicles, or vehicle manufacturers are not able to get a working supply chain for the lithium and the other materials needed for electric car batteries by 2035, this regulation will just cause large numbers of people to leave Vermont (or more realistically, California will be forced to cancel this regulation).

I just wanted to let you know my opinion on this proposed set of rules.

- Peter James, 42 Sunnyside Drive, Barre, VT 05641

From: Charles Hazen
To: O'Toole, Megan
Cc: Joe Benning; Randy Brock; bmurphy@leg.state.vt.us
Subject: Re: Opposed- Advanced Clean Cars II & Advanced Clean Trucks
Date: Friday, September 23, 2022 9:53:58 AM

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

Mr. Joe Benning, Mr. Randy Brock, and Ms. Barbara Murphy,

I ask that you stand up to the environmental fundamentalists driving Vermont's economy into the dirt. I believe the current legislation concerning GWSA and EV mandates will adversely affect Vermont citizens.

Please spend a few minutes looking into this EV video.
<https://www.youtube.com/watch?v=sytWLB4-W-M>

Respectfully,
Charles Hazen

On Tue, Sep 20, 2022 at 11:09 AM Charles Hazen <charles.hazen@gmail.com> wrote:
Megan at al,

I have attached another article demonstrating what happens with a non-resilient power grid that is singularly focused on EVs
<https://www.bloomberg.com/news/articles/2022-09-18/germany-s-bosch-warns-ev-industry-over-battery-cell-reliance?leadSource=uverify%20wall>

For the senator and house members on this email thread, the job of legislating protections for Vermonters falls on you and not the burecrats. The mandatory 2035 EVs and the insane emissions standards goals seem intentional to cripple our state. As I look around at VPIRG and those affiliated with that organization, past and present, it is easy to see who has benefited financially from these climate related legislations. When did Vermont lead by following California and the EU into the abyss?
Stop the insanity. Practice pragmatism. Diversity of energy builds resilience. Help Vermonters, not the special interest groups.

Respectfully,
Charles Hazen

On Thu, Sep 8, 2022, 22:45 Charles Hazen <charles.hazen@gmail.com> wrote:
Megan et al,

The Vermont Congress passed the Global Warming Solutions Act in 2020 which is on track to fail and subsequently open Vermonters to lawsuits. Completely unnecessary legislation based again on ideology.
Ref: <https://vtdigger.org/2022/09/07/vermont-is-not-on-track-to-meet-2030-emissions-reductions-requirements-report-confirms/>

While it seems this legislation, the original subject of my email, is aimed at assisting

making these supercilious goals, I again contest that these goals are unnecessary for our small state. Vermont continues to legislate headlong off a cliff with the other lemmings. These plans will lead to blackouts and human suffering in our state.

A diverse energy plan builds resilience. Forcing Vermonters into 100% electric vehicles is simply another step that is not necessary. I believe the next step will be to drive Vermonters to 100% electric heat, which is untenable. This plan is reducing resilience as well as driving up costs in an unrealistic timeline with no understanding of impact.

Be pragmatic and look at the California canary in the coal mine. The bird is suffocating even though many will not admit it.

Stop the extreme measures. Repeal the GWSA before the state opens itself, and taxpayers, to undue litigation.

In confidence,
Charles Hazen

On Tue, Sep 6, 2022, 07:33 Charles Hazen <charles.hazen@gmail.com> wrote:

Megan,

As a follow-up, where California goes, Vermont should not follow. The 2035 mandate is unnecessary and will cause more harm than good despite best intentions.

<https://www.breitbart.com/economy/2022/09/05/california-declares-energy-emergency-alert-turns-to-natural-gas-backup/>

Sincerely,
Chariots Haze

On Wed, Aug 31, 2022, 16:53 Charles Hazen <charles.hazen@gmail.com> wrote:

Ms. Megan O'Toole,

I am opposed to the requirement that all new Vermont vehicles are electric by 2035. Mandating these requirements puts an undue burden on Vermonters with little to no understanding of the third order of effects. I suggest that a pragmatic approach is taken by allowing other states to lead the way in this effort and learning from their successes and failures.

We have seen the stress that these efforts have placed on the electrical grid across the country. Forcing this situation on our stretched Vermont grid is irresponsible at best while placing a tremendous burden on our poorest. Financially, this burden will place those with the least in an ever-tightening noose of financial decision-making and reduces freedom of choice which is antithetical to our values. While I appreciate the desire to be environmentally conscious, we must do so in a way that is human-centric in its considerations and not put idealism at the forefront and all else be damned for the greater "idealistic" good.

I look forward to hearing that you support Vermont learning from our counterpart states in their desire to charge headlong into these turbulent waters without understanding the infrastructure timelines necessary, the REAL cost implications, and

the waste management solutions that will be required with the 100% electrical vehicle changeover. The timelines do not need to be mandated and Vermont can learn from other states without the undue burden that this would cause.

Ref: Attached VPIRG Email

Sincerely,

--

Charles Hazen
Fairfax, VT
(M)802.735.7062

--

Charles Hazen
(M)802.735.7062

From: [L. Burke Ivey](#)
To: [ANR - DEC Lev Zev](#)
Subject: Regarding Proposed EV Rule
Date: Friday, September 30, 2022 2:51:12 PM

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

To whom it may concern:

My name is Lacey Burke. I am a resident of Willowbrook in Bennington, Vermont, a neighborhood in which most residents' rent is subsidized. After discussing it with my neighbors in a community meeting on September 25, 2022, I write today to express several concerns about the proposed electric vehicle rule developed in California being adopted here in Vermont.

We are concerned about the proposed "environmental justice value credits" for EV manufacturers. We like the idea of increasing access to car share programs. It appears to us, though, that claiming and trading supposed benefits to communities like ours will let manufacturers avoid having to make their products actually accessible to lower-income Vermonters like us, our families and neighbors.

Our neighborhood is surrounded and isolated by high-speed roads that we and our children have to walk along to get groceries and to school sometimes. So we appreciate the attempt to reduce pollution of air and soils from gas and diesel exhaust. But not everybody can afford the ridiculous amount of money for an EV. In fact, none of us can afford to access any of the current incentives Vermont has offered for EVs so far. Many of us cannot afford a vehicle at all! And, we don't think this new rule does nearly enough to help low-income Vermonters afford electric cars.

If we were able to purchase just one vehicle for our family, it would need to be dependable, and able to drive long distances: to get decent medical care, and to work in a rural area on roads that are dangerous in winter. Some of us aren't convinced that an electric vehicle could do all those things. Also, there's no place to charge an electric vehicle around here, and we don't want to be stranded—it's not like our household could afford a second car to come pick us up! We're also worried about the high upkeep costs of EV's, especially the cost to replace the battery.

We wonder whether Vermont has investigated whether the state can support the infrastructure needed to adopt a rule that seems to be causing problems in California. Some of us are also concerned that the environmental impacts of EVs, including disposal of used batteries, and mining for lithium, have not been well-addressed.

Furthermore, if lower-income Vermonters can only afford to access used gasoline-powered vehicles after 2035, those will certainly become increasingly unreliable over time! This will increase the

burden on communities like ours: this is going to affect our kids. It will mean more air pollution in this crowded neighborhood where some of our kids already have asthma, more isolation for those who can't afford cars, and more negative consequences for those of us left driving unreliable vehicles. For instance, when our old cars fail and we can't make it to work, childcare, medical or other required appointments, state agencies are more likely to intervene in our lives, at a high cost to all of us.

Please go back to the drawing board and do better. Instead of supporting another program that concentrates environmental benefits among richer Vermonters in richer neighborhoods and towns, please create rules that make EV's and other high-quality transportation truly accessible to all Vermonters.

Sincerely,
Lacey Burke
Bennington, Vermont

From: [Sally Jenks Roth](#)
To: [O'Toole, Megan](#)
Subject: Submitting Public Comment
Date: Friday, September 23, 2022 4:05:52 PM

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

Dear Ms. O'Toole,

We must adopt new rules that would expand access to the zero-emission vehicles necessary to fight climate change.

Automakers must deliver more zero-emission electric vehicles to Vermont, and require all new cars auto manufacturers sell in Vermont be electric vehicles or other zero-emission vehicles by 2035.

Thank you!

Sally Jenks Roth
Bristol, VT

From: [Jane Stromberg](#)
To: [O'Toole, Megan](#)
Subject: Support a clean VT environment please!
Date: Monday, September 26, 2022 11:19:40 AM

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

Hello Megan,

Thank you for all that you do. I am reaching out to express my support for net-zero car emissions in VT. It truly has never been more important to act on the transportation sector as that is where a massive chunk of our emissions come from. I know that Vermont has so much potential to lead the charge and be the change this country and world desperately needs. I urge 100% support for this effort. I appreciate your time.

Sincerely,
Jane Stromberg

From: [Paul Carnahan](#)
To: [O'Toole, Megan](#); [ANR - DEC Lev Zev](#)
Subject: Support for Advanced Clean Cars II & Advanced Clean Trucks Rules
Date: Thursday, September 29, 2022 10:47:29 AM

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

Hello ANR,

This message is to express my support for the State of Vermont's proposed Advanced Clean Cars II & Advanced Clean Trucks rules. I think it will benefit the state and the nation for Vermont to require automakers to require all new cars auto manufacturers sell in Vermont be electric vehicles or other zero-emission vehicles by 2035.

I was disappointed to learn at your Barre public meeting that hybrids are counted as ZEVs in these regulations. I think that including these carbon-emitting vehicles will make it more difficult for the state to reach its climate action goals. This is a weak link in the proposed rules because it depends on personal behavior. People tend to follow the path of least resistance, which means burning gasoline in hybrid vehicles when it is convenient! Because hybrid vehicles have very little range, owners will be burning gasoline on long trips, which means a lot of carbon will be released into the atmosphere. Even after the state builds out its charging infrastructure, it is highly unlikely that owners of hybrids are going to stop every 50 miles when driving from Brattleboro to Burlington, for example. They are going to travel their first 25 miles on electric power (range of the popular 2022 Toyota Prius Prime) and then burn gasoline for the remainder of the trip. If they are disciplined they will recharge their vehicle in Burlington and the same pattern will be repeated. So for a 300-mile round trip, the vehicle will burn gasoline for 250 miles, or 83% of the trip! These hybrid vehicles should not be considered "Near Zero Emissions Vehicles (NZEV)" as stated in the proposed regulations because they will not help us achieve our climate change goals.

Despite this huge gap, I still support this proposed rule because we have to start somewhere and I understand the realities of following California's lead.

Paul Carnahan
14 Sabin Street
Montpelier, VT 05602

From: [Gretchen Elias](#)
To: [O'Toole, Megan](#)
Subject: support for Clean Car Rules
Date: Friday, September 30, 2022 8:12:21 AM
Attachments: [Elias letter of support for Clean Car Rules.pdf](#)

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

Dear Ms. O'Toole,

Please find attached a letter of support for the Clean Car Rules.

Best,

Gretchen Elias
9 N Park Drive
Montpelier VT 05602
802.223.6360 / 802.505.0980

Agency of Natural Resources Central Office
1 National Life Drive
Davis 2
Montpelier VT 05620-3901

Subject: Advanced Clean Trucks (ACT), Advanced Clean Cars (ACC) II, Low NOx Heavy-Duty Omnibus, and the Phase II Greenhouse Gas Emissions Standard rulemaking.

Dear Secretary Julie Moore,

As a lifelong Nordic skier, a Vermont resident, and a climate activist, I am imploring the Agency of Natural Resources to adopt the Advanced Clean Trucks (ACT), Advanced Clean Cars (ACC) II, Low NOx Heavy-Duty Omnibus, and the Phase II Greenhouse Gas Emissions Standards rules (the "Rules").

Transportation is the largest source of emissions in Vermont. I have worked so hard at the local level to promote public transit and encourage people to change their individual behaviors and mindset regarding. Through this advocacy, I have come to realize that structural changes are needed to bend the curve. Even in a state like ours, with many committed climate activists at the community level, individual decisions to take the bus, ride bikes, or buy an EV are not enough. We need systemic change.

Please adopt these Rules by the end of 2022. In my view, these rules are essential for meeting our Global Warming Solutions Act goals and for making the needed systemic changes to the transportation sector in Vermont so that we can truly be on a climate resilient path.

Sincerely,

Gretchen Elias
9 N Park Drive
Montpelier VT 05602
802.505.0980

From: [Caitlin Gildrien](#)
To: [O'Toole, Megan](#)
Subject: support for Clean transportation
Date: Friday, September 30, 2022 11:27:56 PM

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Hello Ms O'Toole,

I'm writing with my support for the Advanced Clean Cars II & Advanced Clean Trucks rules. I have been looking for a new electric car for the past few weeks and the process has been frustrating. Vermont needs more zero-emission vehicles now, and the world needs us to step up and push for this change to reduce our share of climate pollution.

Thank you,
Caitlin Gildrien
Leicester, VT

From: [Bernard Paquette](#)
To: [O'Toole, Megan](#)
Cc: [Maeve Klm](#)
Subject: Support for rules requiring autos sold in VT to be electric or zero emission by 2035.
Date: Wednesday, September 28, 2022 4:42:30 PM

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Hello,

I support the new rules that would expand access to the zero-emission vehicles necessary to fight climate change. Specifically, the Advanced Clean Cars II & Advanced Clean Trucks rules that would require automakers to deliver more zero-emission electric vehicles to Vermont, requiring all new cars auto manufacturers sell in Vermont be electric vehicles or other zero-emission vehicles by 2035.

Bernard Paquette
320 Browns Trace
Jericho, Vermont
05465

From: [Stephanie Nyzio](#)
To: [O'Toole, Megan](#)
Subject: support of Advanced Clean Cars II....
Date: Friday, September 23, 2022 6:09:33 PM

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

Dear Ms. O'Toole,

I support the passage of the Advanced Clean Cars II & Advanced Clean Truck rules. I am a resident of Bethel, formerly Brattleboro, VT.

If we don't make rules around cutting our greenhouse gas emissions, it won't happen. People need rules because most folks will not do it if it's optional. People do not like change, take the plastic bag ban for example but now we have it and we will never go back!

Respectfully,
Stephanie Nyzio
1002 Gilead Brook Rd.
Bethel, VT 05032

From: [SL](#)
To: [O'Toole, Megan](#)
Subject: Support zero emission vehicles in Vermont.
Date: Wednesday, September 28, 2022 3:49:53 PM

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

I currently own a plug in hybrid car. When I run the vehicle on electricity only, I really like the feeling of helping to keep our beautiful state a little cleaner.

We Vermonters need to do what we can to reduce emissions and this can most effectively be done by transitioning to low or no emission vehicles and by building new clean energy sources. I urge my neighbors and our political leaders to support policies which will encourage the use of zero emission vehicles and the power infrastructure that supports them.

Steven LaVigne
1707 Lake Rd
Milton, Vermont

From: [Cathy Hoyt](#)
To: [O'Toole, Megan](#)
Subject: The Advanced Clean Cars II & Advanced Clean Trucks rules comments
Date: Wednesday, September 28, 2022 5:58:06 PM

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I'm opposed to this wasteful ill considered plan. The infrastructure currently in place is insufficient to support so many ev's. And since diesel is currently the engine that runs the economy, it is foolish, wasteful, and harmful to Vermonters to go forward at the pace you're suggesting. Not all of us have enough blankets to stay warm without heating oil, nor do thousand of hard working Vermonters have the finances to replace perfectly good ice vehicles with ev's.

Cathy Hoyt

From: hiker@gmavt.net
To: [O'Toole, Megan](#)
Subject: The Advanced Clean Cars II & Advanced Clean Trucks rules
Date: Tuesday, September 27, 2022 12:38:42 AM

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

I attended the presentation in Barre and now I am informed. I support these rules. We need more vehicles available to VT, both passenger and truck. We need the tighter rules for cleaner emissions. We can't stop the dirty air from the west but we don't have to enhance it by adding our own tailpipe exhaust. I am glad that it expands the type of zero emission technology to beyond just EV. We all need the improvements this new effort will bring.

William April
310 Mountain View Dr.
Waterbury Center VT

From: [jon crystal](#)
To: [O'Toole, Megan](#)
Subject: The Advanced Clean Cars II & Advanced Clean Trucks rules
Date: Friday, September 2, 2022 4:28:07 PM

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

Dear Ms. O'Toole:

I am writing to share my views on the above proposed legislation. While I fully endorse the underlying impetus and concern, I fear there needs to be more flexibility in the implementation.

I have owned hybrid cars for years, and recently purchased a PHEV. I look forward to being able to buy an EV when the technology and infrastructure support it...which I doubt will happen by 2035. I recently bought a highly efficient PHEV because it is the perfect bridge vehicle to this new world, but the proposed legislation will ban them.

I recall in the mid-1990's at a UVM trustee meeting one highly regarded trustee lauding the advent of the internet and the possibility of online classes. He predicted there would no longer be a need for a physical campus within 5 years. Clearly events didn't unfold as he foresaw.

I think similarly that there needs to be some flexibility in the implementation of this legislation. It needs to keep moving us in the right direction, but needs also to be responsive to a reality that is different from what it envisions.

Thanks for hearing me out.

Jon Crystal

From: [Carole O'Connell](#)
To: [O'Toole, Megan](#)
Subject: The Advanced Clean Cars II & Advanced Clean Trucks rules
Date: Saturday, September 24, 2022 5:29:04 PM

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

I urge you to support these rules that will make electric vehicles more available to Vermonters. However, as a senior on a fixed income, I must add that the price of these vehicles is too high for me. If you want people to give up their current gas-guzzlers, electric vehicles must be affordable for Vermonters and their businesses.

From: ANNE CARVEY
To: O'Toole, Megan
Subject: The Advanced Clean Cars II and Advanced Clean Truck rules
Date: Friday, September 23, 2022 4:11:58 PM

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

Ms. O'Toole:

I'm writing this message to share my strong support for passage of these rules. It is well known by all but those who simply ignore or deny the climate scientists that we humans, including we Vermonters, only have a very limited window of opportunity to prevent irreversibly catastrophic degrees on climate change. These rules amount to a significant, tangible step that our State government can and should take in the direction of mitigating a degree of worsening climatic degradation.

I realize as well that those corporate interests who represent the fossil fuel industries can be expected to exert enormous pressure on our State's government to forestall or completely block passage of these rules. Their influence is, of course, enormous, and their material and lobbying influences are and will be in full play on this question.

But unlike most public issues, the crux of this matter is, over the long run, linked directly to the survival of our species. Even those who represent the fossil fuel interests are and will remain as threatened as the rest of us should we not take what actions we can to first mitigate, and then, hopefully, over time, reverse the trends toward climatic catastrophe.

While these rules by themselves represent but one small but important step in the direction of sustainability and ultimately, species survival, they will bring measurable improvement to Vermont's public health by reducing our carbon footprint.

Thank you for your consideration of my and I'm certain, many other Vermonters' support of these rules.

Eldon W. Carvey
Williston, Vermont

From: [Chief Gonyeau](#)
To: [ANR - Vermont Climate Council](#)
Subject: Transition to all electric vehicle
Date: Saturday, August 27, 2022 2:33:23 PM

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Hi

I have to work night of public meeting so hoping this comment is considered.

I live in an off grid home and have for over fifteen years. I heat with wood and conserve 60 acres of forest land. I do not have the charging ability to maintain and all electric vehicle. Why would you make it more difficult for someone like me to buy a efficient gas vehicle!!

Because I'm off grid I have never received any financial assistance from the state. If something like this goes through there needs to be assistance for those of us in this situation. We will need increased solar panels and battery storage abilities. I understand the concept but I think this needs to be thought through fully with many people already off grid and many others looking to be.

Thanks,

Chris Gonyeau

From: [Taylor Dobbs](#)
To: [O'Toole, Megan](#)
Subject: Transportation Policy
Date: Wednesday, September 28, 2022 3:17:58 PM

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

I'm an arborist and I drive a one-ton truck (GMC 3500) for work. It gets 10 mpg, worse when towing. Despite this, I support an additional per-gallon tax on fossil fuel products if that will help fund infrastructure and incentives for EVs.

Any policy that hastens Vermont's switch to EVs in both business and personal vehicles is a sound policy in my mind.

--

-Taylor Dobbs
he/him
802.881.9837

From: [Robert Hyams](#)
To: [O'Toole, Megan](#)
Subject: transportation
Date: Wednesday, September 28, 2022 7:54:47 PM

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

Megan:

The irony is palpable that we are going to save the planet by buying more cars and trucks. Probably not the right forum, but how about legitimate bike lanes in Chittenden County? Build it, and they will ride (maybe.) For the price of one battery powered truck, how many e-bikes could be purchased?

Thanks for your work.

Robert Hyams

From: [Paulina Muratore](#)
To: [ANR - DEC Lev Zev](#)
Subject: UCS Comment in Support of VT Adopting ACT, HDO, Phase II, ACCII
Date: Friday, September 30, 2022 4:02:07 PM
Attachments: [UCS Comment in Support of Vermont Adopting ACT, HDO, Phase II, ACCII.pdf](#)

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

Dear all:

Thank you for taking comment on these crucial clean car and truck regulations. Attached to this email you will find a comment letter from the Union of Concerned Scientists as well as a supportive letter from 35 Vermont-based scientists. We look forward to seeing these rules come to fruition.

Please let me know if you have any questions.

Best,
Paulina

Paulina Muratore
Transportation Campaign Manager & Policy Advocate
Union of Concerned Scientists
617-301-8038 | [@UCSPaulina](#)

www.ucsusa.org | Join our [action network](#) or [expert network](#) | [Support our work](#).

Join the conversation on the [UCS blog](#) and [All Things Nuclear](#) or follow us on [Facebook](#), [Twitter](#), and [Instagram](#)

The Honorable Julie Moore
Agency of Natural Resources Central Office
1 National Life Drive
Davis 2
Montpelier VT 05620-3901

Subject: Advanced Clean Trucks (ACT), Advanced Clean Cars (ACC) II, Low NOx Heavy-Duty Omnibus (HDO), and the Phase II Greenhouse Gas Emissions Standard rulemaking

Dear Secretary Julie Moore,

On behalf of The Union of Concerned Scientists (UCS) and our hundreds of activists and Science Network members in Vermont, we thank you for the opportunity to comment on the Agency of Natural Resources's proposed adoption of the following rules: Advanced Clean Trucks (ACT), Advanced Clean Cars II, Low NOx Heavy-Duty Omnibus, and Phase II Greenhouse Gas Emissions Standard.

Vermont has a significant opportunity to cement its technological, economic, and environmental leadership by adopting this suite of innovative rules. Together, they will turbocharge the transition away from polluting cars as well as medium and heavy-duty vehicles (MHDV) towards cleaner, more efficient, and economically beneficial electric vehicles. The cars and commercial trucks of the future are available and ready for work today – we urge the agency to adopt these rules to accelerate Vermont's transition to the clean economy of the future. Furthermore, it's crucial that Vermont adopt these rules this calendar year to avoid missing compliance years and delaying the rules' substantial benefits.

Cutting transportation emissions is necessary for the climate and public health

As you likely know, transportation is the largest source of global warming emissions in Vermont, and this tailpipe pollution is also a major contributor to health-damaging local air pollution.¹ Vermont has recently demonstrated its climate progress through the 2020 Global Warming Solutions Act as well as through the work of the Vermont Climate Council. This suite of rules represents a timely and important way to start making concrete steps toward addressing the largest source of emissions in the state, putting Vermont on a path to meet its interim emission reduction goals.

In the Summer of 2020, Vermont joined 10 Northeast and Mid-Atlantic jurisdictions and later Quebec in signing a zero-emission MHDV Memorandum of Understanding (MOU) committing the state to at least 30 percent electric truck sales by 2030 and 100 percent by 2050.² This MOU also states that jurisdictions should create an action plan with concrete steps to help them meet these goals. The first key steps suggested in the recently published action plan are regulatory vehicle sales and purchase requirements including the ACT, HDO, and the Advanced Clean Fleets regulations.³ Adopting the

¹ Vermont Agency of Natural Resources, *Vermont Greenhouse Gas Emissions Inventory and Forecast: 1990 – 2017*, May 2021. https://dec.vermont.gov/sites/dec/files/aac/climate-change/documents/Vermont_Greenhouse_Gas_Emissions_Inventory_Update_1990-2017_Final.pdf

² Northeast States for Coordinated Air Use Management (NESCAUM), *Multi-State Medium- and Heavy-Duty Zero Emission Vehicle MOU* (July 14, 2020), <https://www.nescaum.org/documents/multistate-truck-zev-mou-media-release-20200714.pdf/>; NESCAUM, *NESCAUM Welcomes the Province of Quebec to the Multi-State MHD Zero-Emission Vehicle Initiative* (September 22, 2021), https://www.nescaum.org/documents/quebec-statement_9-22-2021.pdf/

³ NESCAUM, *Multi-State Medium- and Heavy-Duty Zero-Emission Vehicle Action Plan*, July 2022. <https://www.nescaum.org/documents/multi-state-medium-and-heavy-duty-zero-emission-vehicle-action-plan/> at 28.

ACT and HDO rules would put Vermont on a clear path to meet the goals of the MOU and is a concrete step towards reducing both climate and toxic air pollution.

Trucks and buses disproportionately contribute to air pollution and global warming emissions from the transportation sector. Despite making up 10 percent of on-road vehicles in the state, heavy-duty vehicles contribute 32 percent of nitrous oxides (NO_x), 33 percent of direct PM_{2.5}, and 14 percent of greenhouse gas emissions from on-road sources in Vermont. Battery electric trucks have zero tailpipe emissions and when charged on the Northeast electric grid, have around 66-87 percent lower lifecycle global warming emissions compared to diesel trucks, depending on the vehicle application (e.g., long-haul semi-truck vs. local delivery truck).⁴

According to analysis by the International Council on Clean Transportation (ICCT), adopting the ACT, HDO, and Phase II standards in Vermont would result in cumulative reductions of 7,820 tons of NO_x, 44 tons of PM_{2.5}, and 6.17 MMT of greenhouse gas emissions from 2020-2050 compared to a reference case.⁵ This would avoid premature deaths and hospital visits as well as thousands of cases of respiratory illnesses.

Cleaner and electric trucks are ready, available, and economically beneficial

The sales milestones in the ACT rule are technologically feasible and economically sound. The zero-emission MHDV market has undergone significant growth in the last two years, with both fleets committing to electrification as well as vehicle manufacturers producing prototype vehicles and pilot fleets, announcing commercial launch dates, and taking commercial orders for electrified models. In the United States, there are more than 200 models of electric trucks and buses from over 40 manufacturers that are available today or with production announced before this rule goes into effect, covering every truck class and most duty cycles.^{6 7}

Virtually all market segments could be fully mature by 2025, with rapid technological advancements being made for even the most demanding duty cycles.⁸ The ACT rule in Vermont would be a market accelerator for these technologies that are rapidly developing, desperately needed, and would increase the availability of zero-emission vehicles to fleets and operators.

While some electric trucks may have higher initial costs than their diesel counterparts today, electric truck owners and operators see drastically reduced fuel and maintenance costs. Furthermore, the initial cost gap between the two is shrinking each year and, in some applications, electric trucks have a lower total cost of ownership today. A recent UCS review of several studies on electric truck ownership found that in nearly every case, battery electric trucks, including long-haul semi-trucks, are cheaper

⁴ Jimmy O’Dea, *Ready for Work: Now Is the Time for Heavy-Duty Electric Vehicles*, Union of Concerned Scientists, December 2019. <https://www.ucsusa.org/sites/default/files/2019-12/ReadyforWorkFullReport.pdf>

⁵ ICCT, *Benefits of adopting California’s Advanced Clean Truck Program, Heavy-Duty Vehicle Omnibus Standards, Phase II Greenhouse Gas standards and a 100% sales requirement in Vermont*, September 2022. <https://theicct.org/wp-content/uploads/2022/09/HDV-fact-sheet-VT-092122.pdf>

⁶ Ready for Work at 9.

⁷ CALSTART (2022): Drive to Zero’s Zero-emission Technology Inventory (ZETI) Tool Version 7.0. Available online at <https://globaldrivetozero.org/tools/zero-emission-technology-inventory/>

⁸ M.J. Bradley & Associates., *Medium- and Heavy-Duty Vehicles: Market Structure, Environmental Impact, and EV Readiness*, July 2021. <https://www.mjbradley.com/sites/default/files/EDFMHDVEVFeasibilityReport22jul21.pdf>

than diesel vehicles on a total-cost-of-ownership basis for vehicles purchased within the next 10 years.⁹¹⁰

If the Agency adopts the ACT rule, it will further the cost parity between electric and diesel trucks and place Vermont among a growing group of states leading the transition toward cleaner and more efficient commercial vehicles. We also encourage the Agency to adopt the fleet reporting requirement to pair with the ACT. The data collected through that process will be crucial in tracking progress and identifying areas of freight traffic. We recommend that Vermont consider fleets of 5 or more vehicles to capture the most accurate fleet information.

By pairing the ACT with the Low NOx Omnibus and Phase II Greenhouse Gas rules, Vermont will ensure additional clean air and climate benefits. For the remaining combustion engine vehicles on the roads, it is crucial to take advantage of enhanced pollution control mechanisms to reduce harmful emissions. NOx and PM emissions from tailpipes have well documented negative health impacts. Diesel exhaust contains a cocktail of toxic air pollutants that have led it to be deemed a Group 1 carcinogen by the World Health Organization.¹¹ This includes NOx which irritates the heart and lungs and worsens the effects of asthma, especially in children and the elderly. NOx then further reacts in the atmosphere to form PM2.5 and ground-level ozone (soot and smog). PM2.5 is responsible for 63 percent of environmentally caused deaths in the US, and has been linked to premature death, increased hospital admissions for heart and lung diseases, bronchitis, and worsening of asthma and chronic obstructive pulmonary disease (COPD).¹²

Cleaner cars with ACCII

Vermont is also ready for a more aggressive electric vehicle timeline. The ACCII will require zero-emission vehicle sales to be 100 percent of all car sales by 2035 and reduce pollution from gas vehicles that are sold in the interim.

Battery-electric cars do not release tailpipe emissions. Driving an electric vehicle (EV) in Vermont produces 1.2 metric tons of emissions per year compared with 4.9 metric tons from the average new gasoline-powered car.¹³ Overall, driving on electricity in Vermont produces global warming emissions equivalent to a gasoline-powered vehicle that gets 102 miles per gallon. These numbers will only continue to get better as our electric grid further decarbonizes.

Vermonters also stand to gain financially from making the switch to an EV. In 2018, drivers in our state saved more than \$500 each by switching from paying for gasoline to charging electric powered vehicles—and this number does not include additional savings from reduced maintenance costs.¹⁴ EV owners can expect to save an average of \$2,100 in maintenance costs over the life of an EV compared with a similar gasoline car.

⁹ California Air Resources Board, *Total Cost of Ownership Discussion Document: Advanced Clean Fleets Regulation Appendix G*, September 2022. <https://ww2.arb.ca.gov/sites/default/files/barcu/regact/2022/acf22/appg.pdf>

¹⁰ Hunter, Chad, M. Penev, E. Reznicek, J. Lustbader, A. Birky, and C. Zhang, National Renewable Energy Laboratory, *Spatial and Temporal Analysis of the Total Cost of Ownership for Class 8 Tractors and Class 4 Parcel Delivery Trucks*, September 2021. <https://www.nrel.gov/docs/fy21osti/71796.pdf>

¹¹ World Health Organization. *IARC: Diesel Engine Exhaust Carcinogenic*. June 2012. https://www.iarc.who.int/wp-content/uploads/2018/07/pr213_E.pdf

¹² California Air Resources Board. *Inhalable Particulate Matter and Health (PM2.5 and PM10)*. 2022. <https://ww2.arb.ca.gov/resources/inhalable-particulate-matter-and-health>

¹³ Union of Concerned Scientists. *Electric Vehicle Benefits for Vermont: Four Facts You Need to Know*. November 2019. <https://www.ucsusa.org/sites/default/files/2019-11/State-Benefits-of-EVs-VT.pdf>

¹⁴ *Id.*

Conclusion

Vermont is at a crucial point where it can take the lead on climate and air pollution and join the several other Northeast states (New Jersey, New York, Massachusetts, Connecticut) that have adopted, or are on the cusp of adopting, several of these rules. Every year without these further regulations comes with additional dirty diesel trucks and polluting cars going on the road to start their long lifetimes, so it is imperative that the Agency adopt this rule without delay.

We're also attaching to this submission a letter from 35 Vermont based scientists who are members of our Science Network in support of adopting this suite of rules (see Exhibit A).

Thank you for your work on these vital regulations and expanding clean cars and trucks in Vermont. Please do not hesitate to contact us if you have any questions.

Sincerely,

Sam Wilson
Senior Vehicles Analyst
Union of Concerned Scientists
Oakland, California
swilson@ucsusa.org

Paulina Muratore
Northeast States Campaign Manager
Union of Concerned Scientists
Cambridge, Massachusetts
pmuratore@ucsusa.org

Kevin X. Shen
Northeast Transportation Policy Analyst/Advocate
Union of Concerned Scientists
Washington, DC
kshen@ucsusa.org

Exhibit A

**Public Comment on Vermont's Low and Zero Emission Vehicle Regulations
*Advanced Clean Cars II, Advanced Clean Trucks, Low NOx Omnibus,
and Phase II Greenhouse Gas Rule***

To: Vermont Agency of Natural Resources

We, the undersigned 35 Vermont-based scientists, researchers, health professionals, economists, engineers, and planners respectfully submit this testimony in strong support of Vermont adopting the following regulations to address transportation pollution: Advanced Clean Cars II, Advanced Clean Trucks, Low NOx Omnibus, and Phase II Greenhouse Gas Rules.

As you know, the transportation sector in Vermont is responsible for more climate damaging emissions than any other sector. To meet our aggressive climate goals, as well as to clean our local air and strengthen local economies, we must rapidly move away from combustion powered vehicles of all kinds.

Not only are cars and trucks a climate issue for Vermont, but they are also a public health issue. Diesel pollution in particular is responsible for dangerous levels of nitrogen oxide and fine particulate matter that increases the risk of severe respiratory illnesses and other health problems. Studies continue to link long-term exposure to fine particulate matter with an increased risk of death from the COVID-19 pandemic.

The good news is that zero-emission cars and trucks are already becoming readily available in a wide variety of models and sizes that work well in cold weather and across a variety of terrains. But we need manufacturers to start producing more such vehicles that can be sold at competitive prices in our state, as well as regulations that can ensure this transition happens as soon as possible.

Battery-electric cars and trucks also do not release tailpipe emissions. Driving an EV in Vermont produces 1.2 metric tons of emissions per year compared with 4.9 metric tons from the average new gasoline-powered car. Overall, driving on electricity in Vermont produces global warming emissions equivalent to a gasoline-powered vehicle that gets 102 miles per gallon. These numbers will only continue to get better as our electric grid further decarbonizes.

Vermonters also stand to gain financially from making the switch to an electric vehicle. In 2018, drivers in our state saved over \$500 each by switching from paying for gasoline to charging electric powered vehicles – and this number does not include additional savings from reduced maintenance costs. EV owners can expect to save an average of \$2,100 in maintenance costs over the life of an EV compared with a similar gasoline car.

The regulations you are considering are key steps in the right direction. By supporting this, you will demonstrate your commitment to cleaner air and a healthier future. Now is the time for Vermont to continue its climate and clean air leadership.

We encourage you to formally adopt all these crucial transportation regulations.

Signed,

Molly Anderson, Ph.D.
Ecology, Sustainable Food Systems
Middlebury, Vermont

Alan Betts, Ph.D.
Earth Sciences, Climate Science
Pittsford Vermont

Peter Borden, M.A./M.S.
Economics, Public Administration
Fair Haven, Vermont

Samuel Carlson, M.A./M.S.
Environmental Science, Life Cycle Carbon
Accounting for Solar Projects in Vermont
South Burlington, Vermont

Virginia Clarke, D.V.M.
Medicine/Medical Research, Veterinary
Medicine
Richmond, Vermont

Karina Dailey, M.A./M.S.
Ecology, Watershed Science
Jericho, Vermont

David Deane, M.A./M.S.
Engineering, Hydrology
Springfield, Vermont

Wallace Elton, Ph.D.
Earth Sciences, Climatology
Middlebury, Vermont

Clarice Evans, M.A./M.S.
Social Sciences, Psychology
South Burlington, Vermont

Laura Farrell, Ph.D.
Biology, Wildlife and Landscape Ecology
Richmond, Vermont

Doug Frugé, M.A./M.S.
Biology, Fisheries & Wildlife
Whitingham, Vermont

Holly Gorton, Ph.D.
Plant Biology
Jericho, Vermont

David Hill, Ph.D.
Energy Management and Policy Planning
Charlotte, Vermont

Richard Hopkins, M.D.
Public Health, Health Effects of Greenhouse
Gases
Middlebury, Vermont

Monika Ivancic, Ph.D.
Physical Science, NMR Spectroscopy
Burlington, Vermont

Richard Jackson, M.D.
Medicine/Medical Research, Surgery
Shelburne, Vermont

Janet Kahn, Ph.D.
Social Sciences, Medical Sociology
Burlington, Vermont

John Lamperti, Ph.D.
Mathematics, Probability and Statistics
Norwich, Vermont

Alice Leeds, M.A./M.S.
Multidisciplinary Education
President's Award for Excellence in Math and
Science Teaching
Bristol, Vermont

Dani Lloyd, M.P.H.
Public Health Research, Substance Use, Opioid
Overdose Prevention, Communicable Disease
Hyde Park, Vermont

Elaine McCrate, Ph.D.
Economics, Gender Studies
Underhill, Vermont

Linda McGinnis, M.A./M.S.
Economics, Climate and Energy Policy
South Burlington, Vermont

Prashanth Mundkur, Ph.D.
Engineering, Computer Engineering
Winooski, Vermont

Cynthia Needham, Ph.D.
Microbiology, Molecular Biology
Johnson, Vermont

Christopher Neme, MPP
Economics, Statistics and Policy
Shelburne, Vermont

Pam Pearson, M.P.H.
Environmental Science, Climate & Air Quality
Pawle, Vermont

Alan Podber, MSW
Social Work
Brattleboro, Vermont

Lance Polya, Ph.D.
Environmental Science, Environmental
Systems
Jericho, Vermont

Donald Ross, Ph.D.
Environmental Science, Soils
Burlington, Vermont

Elissa Schuett, M.A./M.S.
Ecology, Forest Science
Shelburne, Vermont

Mark Spritzer, Ph.D.
Biology, Neuroendocrinology
Middlebury, Vermont

Christopher von Alt, M.A./M.S.
Engineering, Ocean Engineering
Maidstone, Vermont

William Williams, Ph.D.
Biology, Ecology
Jericho, Vermont

Martin Wolf, M.A./M.S.
Chemistry, Sustainability
Burlington, Vermont

Richard Wolfson, Ph.D.
Solar Physics; Climate Change
Middlebury, Vermont

From: [Jordan Giaconia](#)
To: [O'Toole, Megan](#)
Subject: VBSR Support Letter RE: ACCII/ACT
Date: Friday, September 30, 2022 12:44:29 PM
Attachments: [VBSR ACCII ACT Support Letter.pdf](#)

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

Hi Megan,

I hope all is well and happy Friday! Please see attached for VBSR's letter of support for the Advanced Clean Trucks and Advanced Clean Cars II as well as the Low NOx Heavy-Duty Omnibus, and the Phase II Greenhouse Gas Emissions Standards rules.

As always, thanks for all you do and have a great weekend!

Sincerely,

Jordan

Jordan Giaconia
Public Policy Manager
Pronouns: *He/His*
Vermont Businesses for Social Responsibility
860-304-2251(mobile)
www.vbsr.org



Vermont Businesses
for Social Responsibility

Jordan Giaconia
Public Policy Manager
Vermont Businesses for Social Responsibility
JordanG@vbsr.org
(860) 304-2251

September 29, 2022

Agency of Natural Resources Central Office
1 National Life Drive
Davis 2
Montpelier VT 05620-3901

Subject: Advanced Clean Trucks (ACT), Advanced Clean Cars (ACC) II, Low NOx Heavy-Duty Omnibus, and the Phase II Greenhouse Gas Emissions Standard rulemaking.

Dear Secretary Moore,

On behalf of Vermont Businesses for Social Responsibility and the roughly 650 employers we represent across the state, I am writing to express VBSR’s strong support for the Advanced Clean Trucks and Advanced Clean Cars II as well as the Low NOx Heavy-Duty Omnibus, and the Phase II Greenhouse Gas Emissions Standards rules. We view these measures as essential to both meeting Vermont’s climate commitments and stewarding the Vermont economy.

Transportation is key to Vermont’s economic growth and our overall way of life, but it is also far and away our biggest source of climate pollution—accounting for roughly 40% of the state’s total greenhouse gas emissions. This can be attributed to a number of factors—

- 94% of transportation in Vermont is powered by fossil fuels with 71% coming from light duty vehicles and another 11% from on- road diesel use from heavy duty vehicles.
- Vermonters drive considerably more than our neighboring states with an average Vehicle Miles Traveled per capita of 11,772 mile as of 2020—higher than any other state in the region, higher than the national average, and higher than the per capita VMT in every rural comparison state with the exception of North Dakota.
- Vermont’s sparse development patterns mean that Vermonters must travel longer distances between to get to work, attend school, and shop for goods and services locations. It also makes public transit and active transit significantly more challenging in our more rural communities.

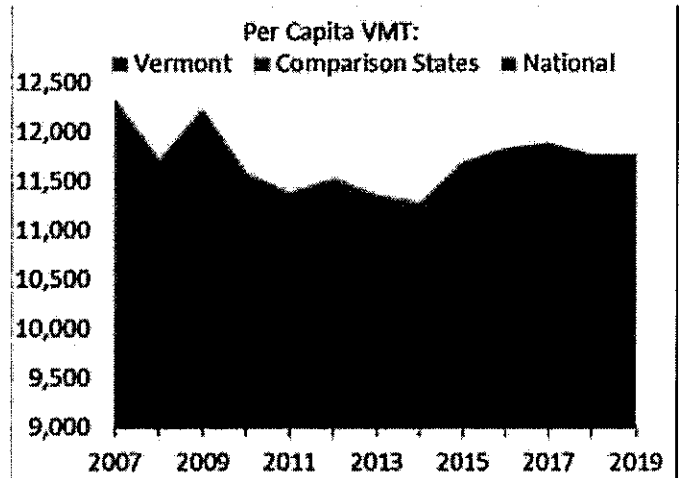


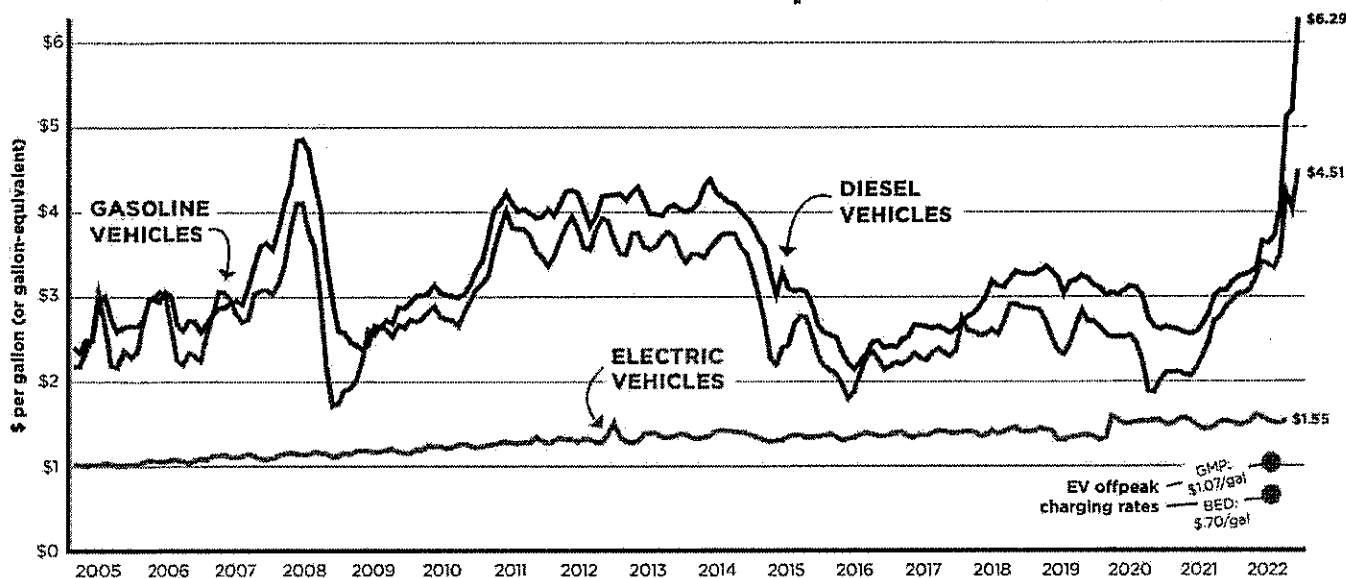
Figure 1 VTrans Vermont Transportation Energy Profile 2021

To effectively shift away from fossil fueled transportation at a pace and scale commensurate with our emissions reductions requirements adopted via the Global Warming Solutions Act, the Energy Action Network’s recent Pathways Report indicates that we need to move a significant number of Vermonters to replace their internal combustion engine (ICE) vehicles with more efficient all-electric vehicles (AEVs). More specifically, we need to boost the total number of AEVs on the road from the 3582 registered in May of 2022 to

27,000 by 2025, and 126,000 by 2030. While this a marked increase, EVs would still make up a comparatively small portion of Vermont's overall vehicle fleet of roughly 580,000 vehicles as of 2021.

Decarbonizing Vermont's transportation sector is not only an environmental imperative but an economic one as well. In 2020 alone, Vermonters spent more than \$700 million on fossil fuels for transportation. Of that total, 72% left the state's economy. Conversely, 70% of electricity spending stayed here in Vermont. Electricity is also considerably less price volatile. In the early days of the COVID-19 pandemic, crude oil was than \$20 per barrel and rose sharply to \$100 per barrel with the Russian invasion of Ukraine in March 2022. As a state that imports 100% of the fossil fuels we consume, Vermont has virtually no control over the price of fossil fuels, but we can challenge that paradigm by promoting the timely adoption of EVs. This would undoubtedly boost household buying power, keep more dollars flowing in our local economies, and foster a more equitable transportation system overall.

Gasoline and diesel vehicles are more expensive to drive than EVs



Sources: Gas and Electric – Drive Electric VT (via EIA); Diesel – Vermont Agency of Transportation (VTTrans). Diesel and gas prices as of May 2022; electricity price as of March 2022.

Lower- and middle-income Vermonters, especially those in our rural communities, face disproportionately higher transportation-related energy burdens (the share of their income they spend on energy) than their more wealthy neighbors. Driving an electric vehicle instead of a gasoline powered one can help to alleviate this burden and save rural Vermonters up to \$1500 per year on operational and maintenance costs alone. VBSR recognizes that there are some upfront cost barriers when it comes to EV adoption, however the electrification of our vehicle market is already underway. As of spring of 2022, 15 models in Vermont had a base cost less than \$40,000, and 5 had a base cost under \$30,000 — and that's before accounting for the significant incentives that can take an additional \$10,000 or more off the price. As manufacturers move to produce more EVs, prices are expected to come down and with the adoption of the ACCII/ACT Rules we can also expect to see an influx of EVs into the used vehicle market as well.

For businesses looking to electrify their fleets, there are a host state and federal incentives, rebates, and grants available to help bridge the affordability gap. Additionally, the state's recently adopted EVSE charging grant program includes millions in funding for workplace chargers which we expect many VBSR members to take full advantage of.

Title	Text
Clean School Bus	<p>The U.S. Environmental Protection Agency's (EPA) Clean School Bus program provides funding to eligible applicants for the replacement of existing school buses with clean, alternative fuel school buses or zero-emission school buses. EPA may award up to 100% of the cost of the replacement bus, charging equipment, or fueling infrastructure. Alternative fuels include electricity, natural gas, hydrogen, or propane. Eligible applicants are school districts, state and local government programs, federally recognized Indian tribes, non-profit organizations, and eligible contractors. EPA will prioritize funding for high-need local education agencies; low income, rural and tribal schools; and, applications that cost share through public-private partnerships, grants from other entities, or school bonds. For more information, including funding availability, timeline, and application materials, see the EPA [Clean School Bus](https://www.epa.gov/cleanschoolbus) website.</p> <p>(Reference [Public Law 117-58](https://www.congress.gov/public-laws/117th-congress) and [42 U.S. Code 16091](https://www.govinfo.gov/))</p>

<p>Electric Vehicle (EV) and Fuel Cell Electric Vehicle (FCEV) Tax Credit</p>	<p>Beginning January 1, 2023, the Clean Vehicle Credit provisions remove manufacturer sales caps, expand the scope of eligible vehicles to include both EVs and FCEVs, require a traction battery that has at least seven kilowatt-hours (kWh), and establish criteria for a vehicle to be considered eligible that involve sourcing requirements for critical mineral extraction, processing, and recycling and battery component manufacturing and assembly. Vehicles that meet critical mineral requirements are eligible for a \$3,750 tax credit, and vehicles that meet battery component requirements are eligible for a \$3,750 tax credit. Vehicles meeting both the critical mineral and the battery component requirements are eligible for a total tax credit of up to \$7,500.</p> <p>Further guidance on these provisions is forthcoming. For more information, including additional eligibility requirements, see the [IRS Plug-In Electric Drive Vehicle Credit](https://www.irs.gov/businesses/plug-in-electric-vehicle-credit-irc-30-and-irc-30d) website.</p> <p>(Reference [U.S. Code 30D](http://www.gpo.gov/fdsys/) and [Public Law 117-169](https://www.congress.gov/public-laws/117th-congress))</p>
<p>Bus and Bus Facilities Grants</p>	<p>The U.S. Department of Transportation's Federal Transit Administration (FTA) administers the Grants for Buses and Bus Facilities Competitive Program. Eligible applicants include state, local, and tribal governments, fixed-route bus operators, and private nonprofit organizations engaged in public transportation. Funds may be used to replace, rehabilitate, and purchase buses, vans, and related equipment, and to construct associated bus facilities. The Bus and Bus Facilities Program is a competitive grant program. For more information, including funding availability and timelines, see the FTA [Bus and Bus Facilities](https://www.transit.dot.gov/bus-program) website.</p> <p>(Reference [Public Laws, 117-58, 117-159, and 117-94](https://www.congress.gov/public-laws/117th-))</p>

congress) and [49,Ä0U.S. Code,Ä05312 and,Ä05339](https://www.govinfo.gov/))

The U.S. Department of Energy (DOE) provides grants for transportation decarbonization research projects. Priority will be given to projects that include:

- Cost-effective deployment of EV charging for those without access to home charging;
- Innovative solutions to improve mobility options for underserved communities;
- Community engagement to accelerate clean transportation options in underserved communities;
- Research and development to reduce EV battery size and cost, increase EV battery range, and decrease EB battery emissions;
- Electrification of off-road and non-road vehicles, including agricultural, construction, rail, marine, and aviation;
- Materials technologies to improve EV efficiency and affordability;
- Use of the alternative fuels in commercial off-road vehicle technologies, including natural gas, hydrogen, and renewable propane;
- Planning and development of medium- and heavy-duty EV charging and hydrogen fueling corridors and advanced engine and fuel technologies to improve fuel economy and reduce greenhouse gas emissions

Applicants must demonstrate how proposed projects will benefit underserved communities that lack access to clean transportation options.

Electric Vehicle (EV) Charging and Clean Transportation Grants

(Reference [Public Law 109-58](https://www.congress.gov/public-laws/109th-congress) and [42 U.S. Code 16191](https://www.govinfo.gov/))

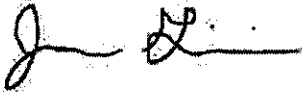
Commercial Electric Vehicle (EV) and Fuel Cell Electric Vehicle (FCEV) Tax Credit	<p>Beginning January 1, 2023, a tax credit will be available to businesses for the purchase of new EVs and FCEVs. Vehicles with a gross vehicle weight rating (GVWR) below 14,000 pounds (lbs.) must have a battery capacity of at least seven kilowatt-hours (kWh) and vehicles with a GVWR above 14,000 lbs. must have a battery capacity of at least 15 kWh. The tax credit amount is equal to the lesser of the following amounts:</p> <ul style="list-style-type: none"> - 15% of the vehicle purchase price for plug-in hybrid electric vehicles - 30% of the vehicle purchase price for EVs and FCEVs - The incremental cost of the vehicle compared to an equivalent internal combustion engine vehicle <p>Maximum tax credits may not exceed \$7,500 for vehicles under 14,000 lbs. and \$40,000 for vehicles above 14,000 lbs. Businesses may not combine this tax credit with the [Clean Vehicle Tax Credit](https://afdc.energy.gov/laws/409).</p> <p>(Reference [Public Law 117-169](https://www.congress.gov/public-laws/117th-congress))</p>
Multi-Unit Dwelling Electric Vehicle (EV) Charging Station Grant	<p>Funding is available to expand access to EV charging stations at multi-unit dwellings. Eligible applicants include governments, businesses, non-profits, homeowner associations, electric utilities, and EV charging equipment providers. Funding may be used for planning, permitting, purchase, installation, and other onetime costs associated with installing EV charging stations. Additional terms and conditions apply. For more information, see the [Vermont Multi-Unit Dwelling EV Charging Grant](https://accd.vermont.gov/multiunit_dwelling) website.</p>

**Exported from US Department of Energy, Alternative Fuels Data Center, <https://afdc.energy.gov/laws>

In addition to the aforementioned programs, a handful of Vermont utilities also provide incentives for workplace charging stations. Green Mountain Power offers a charger, installation, software, project management, and maintenance for roughly \$35-\$50 per month; the Vermont Public Power Supply Authority provides a \$500 rebate for workplace and public chargers; the Burlington Electric Department offers a business incentive of 20% of installation costs up to \$1,000 per station; and the Vermont Electric Co-op provides a \$500 bill credit per connection up to \$2,000 for member businesses and public entities.

In summation, the return on investment of EV adoption is undeniably strong, there are resources available to overcome the initial cost barriers that we should continue to build on, and just as importantly, these rules are the only meaningful policies available to reduce our transportation emissions while growing our economy. For these reasons and so many more, VBSR strongly supports the adoption of the Advanced Clean Trucks and Advanced Clean Cars II as well as the Low NOx Heavy-Duty Omnibus, and the Phase II Greenhouse Gas Emissions Standards rules. As always, thank you for all that you do to reduce our transportation emissions and create a more just, thriving, and equitable Vermont economy. We are happy to offer additional comments and field questions as needed.

Sincerely,

A handwritten signature in black ink, appearing to read 'Jordan Giaconia', with a stylized flourish at the end.

Jordan Giaconia
Public Policy Manager

From: [Nilah Cote](#)
To: [O'Toole, Megan](#)
Subject: Vermont electric vehicles
Date: Friday, September 23, 2022 6:01:23 PM

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

My husband and I would love to purchase an electric vehicle but the availability of these cars is very slim in Vermont at the present time.

We support this legislation. It is one way we feel we could support climate change

John and Nilah Cote

From: [Alan LaBounty](#)
To: [ANR - DEC Lev Zev](#)
Subject: Vermont Low and Zero Emission Vehicle Regulation
Date: Friday, September 30, 2022 2:38:03 PM

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

Hello,

I have concerns on the viability of the regulation. Have there been any discussion on if we do end up going 100% electric is Vermont for one going to invest a substantial amount of money into the electrical grid to support the substantial influx of amperage draw from charging vehicles so we don't end up like California where the residents were told to not charge their vehicles at certain times during the year? two is Vermont going to take over the grid so that Vermonters have their choice on which electrical supplier they can go with so they can get a competitive KW/H rate? Is Vermont going to put in some sort of law that requires electric companies to only charge a certain margin over there cost to produce it? Has any conversation been had about the production rate of electrical vehicles? Has any conversation been had at the amount of CO is produced in unregulated countries to mine the rare earth minerals needed to produce the batteries? Have there been discussions on how or lack thereof the batteries will be recycled? Is Vermont going to pass a right to repair law so companies like Tesla cannot keep owners from working on their own cars which in my opinion is absolutely necessary for this regulation? Has the State of Vermont discussed putting in a Nuclear power plant which is the absolute most efficient way to create electricity much more so than wind or solar while not littering our landscape with panels that some of which will have probably failed and need replacing by the time this regulation hit 2035? Also side note why hasn't the State of Vermont forced Burlington to close its wood burning power plant which produces the most CO in the state if it is serious about Vermont's climate? These are just a few items that came to mind. Also so you don't think I am against EV's I have had a reservation for a Tesla Cybertruck for the last three years so I am not opposed but I have concerns about moving on this regulation this quick without knowing if any of the issues I have thought of have been discussed. Thank you

Alan LaBounty
Estimator
328 Main St.
Derby, VT 05829



Derby, VT: 802.766.4949 | Lyndonville, VT: 802.626.4588 | Morrisville, VT: 802.898.3827 | Richford, VT: 802.848.3164



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From: [Robert](#)
To: [O'Toole, Megan](#)
Cc: [Anne Donahue](#); kgoslant@leg.state.vt.us
Subject: Vermont Low Emission Vehicle and Zero Emission Vehicle Rules
Date: Wednesday, September 28, 2022 1:17:29 PM

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

Comments filed in regards to the "Vermont Low Emission Vehicle and Zero Emission Vehicle Rules" (these rules)

Filed by email to Megan O'Toole, Contact person at the Agency of Natural Resources (ANR), from Robert Howe, Berlin VT, email address jwa2340@gmail.com... with copies to Rep. Donahue and Rep. Goslant

(It appears that the employees of ANR have put a lot of research, study and commitment into these rules. These comments are in no way meant to be derogatory to the employees of ANR. I have just had a short time to review this proposal before the deadline, as I only learned about these rules recently when looking at online information regarding the trees changing color. I will likely never understand the credits, etc. that are discussed for manufacturers, but there was a lot of information to review.)

My comments include: **These rules should not be adopted at this time.** This opposition is more in regards to the timing of these rules than the content. **The rules should not be adopted until:**

- **until...** The Vermont Comprehensive Energy Plan and the VELCO Long-Range Transmission Plan demonstrate that the electrical infrastructure in Vermont will be adequate to handle the electrical vehicles being added to the system. The supplemental information provided with these rules indicate that the system is only adequate until 2031, just as new gasoline powered vehicles are being totally phased out and the electrical demand would increase even more. What new generating facilities and power sources will be needed for the additional electrical power?
- **until...** At least one half of the Northeast States for

Coordinated Air Use Management (NESCAUM), that Vermont is a member of, have adopted the so-called California Rules that are included in these rules. That will allow Vermont to learn from the information and results gathered by those states so that Vermont can make a more informed decision and not make the same mistakes.

- **until...** The federal government has taken the opportunity to update the federal rules that are the same or similar to these rules proposed by ANR. The federal motor vehicle standards will still apply to motor vehicles sold in Vermont, as well as the rest of the country.
- **until...** California has demonstrated that their rules are workable with their electrical infrastructure.

These rules include a lot of regulatory and scientific terms. But taking a more rational look at the question of the timing of this rule... *would a Vermont farmer build a new barn on the opposite side of the river from his farm before they have a bridge to get there?*

Other comments and questions on these rules.

- A lot of the benefits anticipated and included in these rules are health benefits for Vermonters and people who visit here. A very good goal, but does ANR have the authority to adopt rules regarding the health of Vermonters? Should the Health Department jointly adopt these rules? Did the Health Department provide the data regarding improvements in the health of Vermonters included in these rules? Does the Health Department support these rules as proposed?
- The cost benefit data does not appear to consider some important factors. It included a number for the cost of gasoline at the peak rate in June. What would the cost benefit be when gasoline is priced at \$3.00 or \$3.50 a gallon. The cost benefit did include an estimate (\$680) for additional electrical wiring, but did not include the cost for a home charger. Is that an important cost to consider? Will most ZEV be charged at home? What inflationary costs were included for the cost of vehicle batteries because of the regulatory demand? Several news stories have focused on a purchase of

a used electrical vehicle and that the replacement battery costs more than the vehicle. Will it be cost effective to purchase a used electric vehicle? Is there really a savings when purchasing a ZEV, if all factors, including the higher initial costs are considered?

- Is the cost benefit data and emissions data based on vehicles sold/registered in Vermont or does it include passenger vehicles and trucks traveling through Vermont?
- I did not notice any information regarding the use of ZEV in winter in Vermont. Early information on hydrogen fuel cell vehicles (FCEV) indicated that they were not suited to Vermont winters. Has that changed? Is the range for ZEV shorter in cold weather? Would that impact the cost benefit data? Can ZEV vehicles be towed/recovered in the winter? What is the effect of salt and brine on ZEV and the battery system? Do ZEV have lower clearances when driving in snow? Do ZEV have clearance for tire chains?
- What happened to plug-in hybrid vehicles(PHEV)? Can they be sold in Vermont? Are they good for credit for the manufacturer? How is the performance of a PHEV compared to a ZEV in a Vermont winter? Will they be phased out in favor of ZEV?
- How can these rules indicate... *"Vermonters ... will be indirectly impacted by the overall shift to vehicle electrification over time"*? Every Vermonter will be impacted by these rules over time!

Too many unanswered questions and there is a need to wait for more information.

I would urge that ANR and the Joint Committee on Legislative Rules postpone the adoption of these rules.

From: [Matthew LeFlier](#)
To: [O'Toole, Megan](#)
Subject: Vermont. Transportation. Suggestions!
Date: Friday, September 23, 2022 4:55:26 PM

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Accessibility components transportation and manufacture systems to help individuals with disabilities get to car they need to fit their lifestyles.

From: [Karl Kemnitzer](#)
To: [O'Toole, Megan](#)
Subject: VT Clean Cars and Trucks rule needs to be adopted
Date: Monday, September 19, 2022 8:16:39 PM

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

Dear Ms O'Toole,

I strongly urge Vermont leaders to adopt California's Advanced Clean Cars II, Advanced Clean Trucks (ACT) rule, and Heavy Duty Omnibus (HDO) rules. It is well past time that we took better care of our state.

Thank you,
Karl Kemnitzer
58 Densmore Hill Road
Hartland, VT 05048

From: [William Smith](#)
To: [ANR - DEC Lev Zev](#); [Ritzer, Deirdra](#)
Cc: [Roland Bellavance](#); [Robert J. Sculley](#); [Diane Lanpher](#); [Cota, Matt](#); [Richard Wobby](#); [Kevin Kouri](#); [Flynn, Joe](#)
Subject: VTBA comments on ANR rulemaking regarding EV medium and heavy duty trucks
Date: Thursday, September 29, 2022 11:15:13 AM
Attachments: [ANR Rule comments VT Truck & Bus Association.pdf](#)

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Attached please find comments on behalf of the Vermont Truck & Bus Association to the ANR rules as proposed.

Regards,

William S. Smith, Esq.
William S. Smith, Esq.

Law Office of William S. Smith
32 Depot Square
PO Box 456
Northfield, VT 05663
(802)485-6100
Bill@SmithLawVT.com



VERMONT TRUCK & BUS ASSOCIATION, INC.

September 29, 2022

Agency of Natural Resources
Secretary Julie Moore
1 National Life Drive, Davis 2
Montpelier, VT 05620-3901

Via email to: ANR.DECLEVZEV@VERMONT.GOV

CC to: Deirdre.Ritzer@vermont.gov, Air Quality and Climate Division, Mobile Sources Section

RE: Vermont proposed Advanced Clean Truck rules

Dear Secretary Moore:

I am writing on behalf of the VTBA to express our reservations and concerns about the proposed Advanced Clean Trucks rules. I understand that other associations and business owners will also be commenting with regard to the legality of using California rules and the questionable authority California has to implement them based on the Clean Air Act, and I echo those concerns.

We know that the rules are directed at manufacturers, and that medium and heavy duty truck availability is of great concern, regardless of how they are powered. The overall number of available new trucks at Vermont dealerships is already severely restricted. Our comments below are focused on the cost to a Vermont business to purchase an electric truck, when one becomes available. Trucking companies have to replace their trucks every 5 years or so, with typical mileage being 80,000/yr for local haulers, and 100,000/yr for long haul.

First, I understand the effort. We all want cleaner air and less hydrocarbons being emitted. However, in order to purchase an electric medium or heavy duty truck or bus, there are substantial real world impacts on Vermont trucking and bus companies that cannot be ignored. They break down into three essential areas: Cost of vehicle, cost of infrastructure to the business, and lack of adequacy of electric trucks to meet the hauling needs of customers. I will be focusing on the truck side of this equation, in the interest of space, but I do know that bus company impacts will be similar in regard to up front costs and infrastructure requirements.

1. Cost of vehicle.

To use Class 8 tractor units as an example, a Freightliner electric tractor will cost in excess of \$415,000 to purchase. This is in contrast to a diesel tractor costing \$155,000. The timeline to deliver the electric truck is two years, versus the diesel truck at roughly 8 to 12 months. This is 2.5 times the cost, 2 times the delay. Can any business sustain an added cost, up front, of over a quarter million dollars? This also does not address the availability of any new heavy trucks for sale in VT. My members are being told that Freightliner will have 15 class 8 power units for sale in VT next year; International may have zero.

2. Cost of infrastructure to the business.

a. Cost of charging station

Estimates I have received indicate the cost to purchase and install a charging station is about \$200

per kilowatt hour (kWh) of engine power. A typical class 8 truck will have 400kWh, with a resulting cost of \$80,000 to install each charging station.

b. Cost of replacement battery after service life

The current estimated service life of passenger car batteries is 100,000 to 200,000 miles. I have read nothing to indicate a larger battery will have a longer life, so using 200,000 miles between battery replacements, we have the following: since it costs \$132/kWh per battery (2022 figure) to buy one--- that is over \$52,000 per battery. That is a \$26,000 per year cost for each truck.

I have been told by advocates for EV that truck and bus companies can solve some logistical problems by owning multiple battery packs for each truck. In addition to the cost of extra batteries, there is the cost for the space to store them, and the equipment to safely move them.

While it is easy to tell someone else to spend money to solve a problem, this does not answer the impact on a business of requiring them to spend hundreds of thousands of dollars up front in order to use a mandated product.

c. Cost to ensure electric power at the business location is sufficient

It is simply unknown if the grid itself, or the current electrical system to a particular business, is sufficient to supply the kind of charging capacity which will be needed at businesses. What is certain is that there will be a cost for any upgrades into a business, and that cost will primarily be borne by the business.

Fuel cost savings versus costs of acquisition and operations: The total VT tax on diesel fuel just went up 4 cents to 36 cents/gallon, and Federal tax is 24 cents/gallon. With an 80,000 mile/yr at 6mpg, that is \$4800/yr is state tax revenue lost, and \$3200/yr in federal tax revenue lost, per truck.

3. Hauling issues

a. Reduction in payload due to weight of battery

The weight of a class 8 electric power unit adds 4,000 to 8,000 pounds to the tractor unit versus a diesel unit. This additional weight both must be addressed for maintenance on running gear, and reduction in net payload of 10 to 20% weight. That reduces profitability of the truck to its owner.

b. Charging times on-site and on-road

In long haul operations, where are the charging stations en route and how long will it take to charge a truck? Will the time spent at a charging station be counted against the hours of service of the driver? If a rapid charging station capability is developed---some are being studied now--- they will require megawatts of power to move the charging times down to the 60 to 90 minute range. That will require higher capacity electric grid connections, which will cost even more to safely construct. And the cost of all that power will also higher.

c. Real world range issues

Manufacturers are post real world ranges of about half of quoted ranges. 250 mile ranges are optimistic, at best, and will be severely degraded by cold temperatures and hilly roads---both of which our state has in abundance. What is a trucker to do, when range ends and no charging locations are available? What are our customers to do, when that load is delayed 90 minutes, or 8 hours? Has this even been considered? Will a charging location have enough capacity (electrical and station) to meet the needs of

Trucks that need charging? I am sure we can all agree that this is not as simple as the passenger car EV charging issue.

The numbers, in the end: The truck owner will save \$50,000-60,000/yr in fuel costs at \$3.71/gallon today, but this is offset: by the likely new tax per mile needed to replace fuel tax revenues; by the added cost of \$50,000/yr over its service life of 5 years for the truck itself; \$26,000/yr for battery replacement after 200,000 miles; the added upfront cost of the charging stations and their power supply, both on-site at business locations and over the road; and the added costs to train and hire mechanics with expertise in electric vehicle power trains---if we can even get them.

VTBA members question the mandate of these rules and whether other agencies were truly aware of their impacts on everything from fuel taxes that pay for road maintenance; to the impact on our electric grid; to the hundreds of thousands of dollars of up front costs that will be borne by Vermont businesses. We urge you to at least ensure that VT businesses will continue to have the ability to use proven diesel technology until such time as electric medium and heavy duty trucks and buses are truly economically viable.

Sincerely,



William S. Smith, Esq., for Vermont Truck & Bus Association, Inc.

Approved as to content by:

Roland Bellavance, President, Vermont Truck & Bus Association, Inc.

Bellavance Trucking Co.

PO Box 398

Barre, VT 05641

Phone: (802)479-9311

Fax: (802)479-9777

rolandb@bellavancetrucking.com

cc: Chairman Richard Mazza, Senate Transportation Committee
Chairwoman Diane Lanpher, House Transportation Committee

From: [Diane Alberts](#)
To: [O'Toole, Megan](#)
Subject: What about the "Guy" factor?
Date: Wednesday, September 28, 2022 3:50:27 PM

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

Somehow, if we hope to switch the vast majority of Americans, Vermonters included, over to EVs, we'll have to effect one of two attitude changes. 1) "My convenience and financial outlay for energy is all that is important to me" and 2) my vehicle is just as (if not more) important to my self-image as my dwelling. I think the first is starting to change a bit, amid lots of griping and blaming of the president, thanks to high gas prices; but what can you do about the guys and their love affair with gas-powered - everything!, but especially their primary vehicles? I live on what I've often called "Pick-up hill," as the smallest vehicle you're likely to see on any given day is an SUV. (Well, there is one guy whose guy thing translated into a snazzy sports car, but he's an exception.) The bigger, the shinier and louder the pick-up the better. Work vehicles? Nah. Guy vehicles. Most of them look like they've never spent a night outside of a garage or done anything more like work than to haul the family trash to the dump. Try to tell these "guys" that they need to drive an electric vehicle that doesn't even make any noise!

Throw in the love affair many have for car racing. Who's going to tell them that the races have to go unless all the vehicles are electric? Think of the recreational events here in Vermont that rely on gas-powered vehicles doing stupid, gas-wasting things like driving through created mud baths. The pride those guys take in driving around town in a jacked-up pick-up splattered with mud? The only time they're allowed to get dirty.

I recall the establishment of OPEC in the early 70s. We had a neighbor, a welder, who did use his truck for his job - but also for all his transportation. What with the heavy welding equipment in the back, he was probably getting about 5mpg. His solution to the sheiks jacking up the price of gasoline to an outrageous \$1/gallon? "We need to drop the hot one on them." That's right: nuke the Middle East so he could continue to use his work vehicle to drive everywhere. (He could easily afford a second, economical vehicle, but chose not to.) His thinking was so short-sighted that it didn't occur to him all the negative effects on the planet of "the hot one," including destroying the mechanisms for drilling, storing, refining, and transporting that Middle Eastern oil. This is the kind of mentality that we're up against when it comes to persuading Vermonters to buy EVs.

Diane Alberts
Rutland, VT

From: [Curt McCormack](#)
To: [O'Toole, Megan](#)
Subject: Written From the Ethan Allen Express Amtrak Train
Date: Thursday, September 29, 2022 3:50:42 PM

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

Dear Megan,

Please accept the following comments regarding the Advanced Clean Car II and the Advanced Clean Trucks proposed rule(s) presently under consideration by the Agency of Natural Resources. While I support the adoption of this rule wholeheartedly, I have little doubt that they are not strong enough

Perhaps more feasible than California, Vermont can set the pace for a future that we will not be ashamed to leave for future generations. But as you know perhaps better than I, there is no time to waste. Indeed, we have wasted too much time already.

The Clean Air Act, a law you and I both "love" and respect, has been the only serious catalyst we have had to fight climate change from transportation. We must take full advantage of this law along with the California program, of which we are a part, to provide the leadership so sorely needed at this critical time.

Over the years CAFE standards have resulted not only in our saving billions of gallons of gasoline and diesel fuel but the bringing about of slightly smaller vehicles in both the passenger car class and light duty trucks. Tragically, the trend has reversed as a result of larger vehicles (nearly 80% of new vehicle sales) and more powerful engines. This is making our roads less safe for those precious few, who still drive small vehicles. And, of course, like all of the light duty truck (including SUVs) loopholes, is sabotaging the effect of CAFE.

We can lead the way to a RAPID transformation from over-sized SUVs and enormous pick-up trucks to smaller vehicles both gasoline and EVs. Why wait for EVs to take over when we can require smaller gasoline vehicles immediately? Let's do better than simply going from gas guzzlers to electricity guzzlers.

Please move as quickly as you can and as aggressively as you can. The future depends on SOMEONE stepping forward like no one has as of yet.

With the greatest respect,

--

Rep. Curt McCormack
curt.mccormack@gmail.com
802-318-2585

From: [Kali Brgant](#)
To: [O'Toole, Megan](#)
Subject: Yes to electric cars
Date: Friday, September 23, 2022 9:39:58 PM

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Yes to this bill! No to fossil fuel lobbyists! --

Kali Brgant Wisdom Within You, LLC WisdomWithinYou.com 802-

From: [Peggy West](#)
To: [O'Toole, Megan](#)
Subject: Zero emissions transport
Date: Wednesday, September 28, 2022 8:28:08 PM

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

Good evening,

I am writing to express my support for advancing clean transportation advances for Vermonters. In early 2020 I purchased an EV and I have been grateful ever since. Our planet is in peril and we need to address every source of carbon emissions. Transportation is a very important sector in that regard.

Please know that Vermonters like me care deeply about a sustainable future that is within reach of all.

Thank you for reading!
Peggy West
South Londonderry, VT

From: [Debora Tramposh](#)
To: [O'Toole, Megan](#)
Subject: zero emissions
Date: Wednesday, September 28, 2022 3:33:20 PM

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I support expanding access to zero-emission vehicles as quickly as possible. We must stop relying on fossil fuels, and get out from under the control of those who are trying to maintain our dependence.

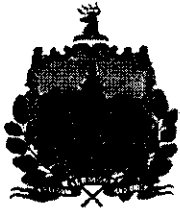
thank you,
Debora Tramposh

From: Judy
To: O'Toole, Megan
Subject: Zero-Emission Vehicles
Date: Saturday, September 24, 2022 4:37:41 PM

EXTERNAL SENDER: Do not open attachments or click on links unless you recognize and trust the sender.

I strongly urge the requirement that all new automobiles sold by auto manufacturers in Vermont be zero-emission by the year 2035. Climate change is becoming more evident with passing time and gasoline-powered automobiles and trucks are a large part of it. I firmly back the passage of the Advanced Clean Cars II and the Advanced Clean Trucks rules.

Judith Kniffin
Bennington, VT



STATE OF VERMONT

Agency of Natural Resources

Chapter 40: Vermont Low Emission Vehicle and Zero Emission Vehicle Rules

Effective Date: [DATE]



Air Quality and Climate Division
Department of Environmental Conservation
1 National Life Drive – Davis 4
Montpelier, VT 05620-3704
Tele: (802) 828-1288

40-101 DEFINITIONS

The terms defined in this Chapter shall apply to this Chapter only, and for purposes of this Chapter shall supersede definitions contained in any other regulation. The definitions contained in *Air Pollution Control Regulations* Section 5-101 shall govern in the absence of a superseding definition in this section.

- (a) “*California-certified*” means approved by *CARB* for sale in California.
- (b) “*CARB*” means the California Air Resources Board.
- (c) “*Dealer*” means any *person* engaged in the business of selling, offering to sell, soliciting or advertising the sale of new *vehicles* who holds a valid sales and service agreement, franchise or contract, granted by the *manufacturer* or distributor for the retail sale of said *manufacturer’s* or distributor’s new *vehicles*.
- (d) “*Emergency Vehicle*” means any authorized *vehicle* publicly owned and operated that is used by a peace officer, used for fighting fires or responding to emergency fire calls, used by emergency medical technicians or paramedics, used for towing or servicing other *vehicles*, or used for repairing damaged lighting or electrical equipment.
- (e) “*Emission Control Label*” means a paper, plastic, metal or other permanent material, welded, riveted or otherwise permanently attached to an area within the engine compartment (if any), or to the engine, in such a way that it will be visible to the average *person* after installation of the engine in *new vehicles* certified for sale in California, in accordance with Title 13, California Code of Regulations.
- (f) “*Environmental Performance Label*” means a paper or plastic decal securely affixed by the manufacturer to a window of all passenger cars, light-duty trucks, and medium-duty passenger vehicles which discloses the global warming and smog score for the vehicle in accordance with Title 13, California Code of Regulations.
- (g) “*Fleet Average Emission*” means a vehicle manufacturer’s average vehicle emissions of all greenhouse gases, non-methane organic gases (NMOG), or NMOG plus oxides of nitrogen (NOx), as applicable, from all *new vehicles* delivered for sale or lease in Vermont in any *model-year*.
- (h) “*Greenhouse gas*” means the following gases: carbon dioxide, methane, nitrous oxide, and hydrofluorocarbons.
- (i) “*GHG Credit*” means *greenhouse gas* credit.
- (j) “*Gross Vehicle Weight Rating*” or “*GVWR*” is as defined in Title 13, California Code of Regulations Section 1900 or Title 17, California Code of Regulations Section 95662, as applicable.
- (k) “*Heavy-duty Vehicle*” is as defined in Title 13, California Code of Regulations Section 1900 or Title 17, California Code of Regulations Section 95662, as applicable.
- (l) “*Heavy-duty Engine*” is as defined in Title 13, California Code of Regulations Section 1900 or Title 17, California Code of Regulations Section 95662, as applicable.
- (m) “*Light-duty Truck*” is as defined in Title 13, California Code of Regulations Section 1900.
- (n) “*Manufacturer*” means any independent low volume, small, intermediate or large volume *vehicle* manufacturer as defined in Title 13, California Code of Regulations Section 1900.
- (o) “*Medium-duty Engine*” is as defined in Title 13, California Code of Regulations Section 1900 or Title 17, California Code of Regulations Section 95662, as applicable.
- (p) “*Medium-duty passenger vehicle*” is as defined in Title 13, California Code of Regulations Section 1900.

- (q) “*Medium-duty Vehicle*” is as defined in Title 13, California Code of Regulations Section 1900 or Title 17, California Code of Regulations Section 95662, as applicable.
- (r) “*Model Year*” means the manufacturer’s annual production period which includes January 1 of a calendar year or, if the *manufacturer* has no annual production period, the calendar year. In the case of any *vehicle* manufactured in two or more stages, the time of manufacture shall be the date of completion of the chassis, except for a vehicle or engine subject to Title 17, California Code of Regulations Section 95662(a)(16).
- (s) “*New Vehicle*” means any *vehicle* with 7,500 miles or fewer on its odometer.
- (t) “*Near-zero-emission vehicle*” or “*NZEV*” means one of the following: (A) An on-road plug-in hybrid electric vehicle which has the same definition as that in 40 CFR section 86.1803-01, amended on July 1, 2011, incorporated by reference herein, that achieves all-electric range as defined in Title 13, California Code of Regulations Section 1963(c)(1); or (B) An on-road hybrid electric vehicle that has the capability to charge the battery from an off-vehicle conductive or inductive electric source and achieves all-electric range as defined in Title 13, California Code of Regulations Section 1963(c)(1).
- (u) “*NMOG Credit*” means non-methane organic gas credit.
- (v) “*NMOG + NOx Credit*” means non-methane organic gas plus oxides of nitrogen credit.
- (w) “*Passenger Car*” is as defined in Title 13, California Code of Regulations Section 1900.
- (x) “*Qualifying Community-based Clean Mobility Program*” means a program determined by the Vermont Air Pollution Control Officer to qualify as a community-based clean mobility program pursuant to guidance issued by the Vermont Department of Environmental Conservation. The Vermont Air Pollution Control Officer must determine that a program qualifies as a community-based clean mobility program before a manufacturer may earn vehicle value pursuant to the requirements of Title 13, California Code of Regulations Section 1962.4.
- (y) “*Recall*” means:
 - (1) The issuing of notices directly to consumers that *vehicles* in their possession or control should be corrected, and/or
 - (2) Efforts to actively locate and correct *vehicles* in the possession or control of consumers.
- (z) “*Smog Index Label*” means a decal securely affixed by the *manufacturer* to a window of all *passenger cars* and *light-duty trucks* which discloses the smog index for the vehicle in accordance with Title 13, California Code of Regulations Section 1965.
- (aa) “*Trailer*” is as defined in Title 17, California Code of Regulations Section 95662.
- (bb) “*VECs*” means *vehicle* equivalent credits.
- (cc) “*Vehicle*” or “*motor vehicle*” means any passenger car, light-duty truck, medium-duty passenger vehicle, medium-duty vehicle, or heavy-duty vehicle, as appropriate.
- (dd) “*Zero-emission Vehicle*” or “*ZEV*” means a vehicle that produces zero exhaust emissions of any criteria pollutant (or precursor pollutant) or greenhouse gas, excluding emissions from air conditioning systems, under any possible operational modes or conditions.
- (ee) “*ZEV Credit*” or “*ZEV value*” means a unit, expressed numerically, generated in accordance with Title 13 California Code Regulations, Sections 1962.2, 1962.4, and 1963.2.

40-102 INCORPORATION BY REFERENCE

- (a) This Chapter incorporates by reference certain sections of Titles 13 and 17, California Code of Regulations. Section 201 of this Chapter lists the sections of Titles 13 and 17, California Code of Regulations incorporated by reference. The sections of Titles 13 and 17, California Code of Regulations incorporated by reference in this Chapter are the version of the section adopted as of the incorporation by reference date in Section 201, herein.
- (b) For purposes of applying the incorporated sections of the California Code of Regulations, unless clearly inappropriate or alternatively defined in this Chapter, "California" shall mean "Vermont". For example, "delivered for sale in California" and "placed in service" are interpreted, except for determinations of whether a manufacturer is a large, medium, small, independent low volume, or low volume manufacturer, as referring to *vehicles* in "Vermont".

40-103 NEW VEHICLE EMISSION REQUIREMENTS

- (a) No *person*, including a *manufacturer* or *dealer*, shall deliver for sale or lease, offer for sale or lease, sell or lease, import, acquire, receive, purchase, or rent a *new vehicle* that is a 2000 or subsequent *model-year passenger car* or *light-duty truck* or a 2004 or subsequent *model-year medium-duty vehicle* in Vermont unless the *vehicle* is *California-certified* and complies with the following criteria:
 - (1) The exhaust emissions standards, as applicable, in Title 13, California Code of Regulations, including:
 - (A) The Low Emission Vehicle Program, Sections 1900, 1956.8, 1960.1, 1961, 1961.2, and 1961.4;
 - (B) The Greenhouse Gas Emission Standards Program, Sections 1961.1 and 1961.3; and
 - (C) The Zero Emission Vehicle Program, Sections 1962, 1962.1, 1962.2, 1962.4, 1962.5, and 1962.6.
 - (2) The *emission control label* requirements, the *smog index label* or the *environmental performance label* requirements for 2002 through 2009 *model-year vehicles*, and the *environmental performance label* requirements for 2010 and subsequent *model year vehicles* in accordance with Title 13, California Code of Regulations Section 1965, except as otherwise provided by 10 V.S.A. §579(d).
 - (3) The evaporative emissions standards in Title 13, California Code of Regulations Sections 1976.
 - (4) The refueling emissions standards in Title 13, California Code of Regulations Section 1978.
 - (5) The malfunction and diagnostic system requirements in Title 13, California Code of Regulations Sections 1968.1 and 1968.2.
 - (6) The assembly-line testing procedure requirements in Title 13, California Code of Regulations Section 2062.
 - (7) The specifications for fill pipes and openings of *motor vehicle* fuel tanks in Title 13, California Code of Regulations Section 2235.
- (b) Effective for model year 2026 and subsequent *model years*, any *manufacturer* that certifies on-road *vehicles* over 8,500 pounds *GVWR* for sale or lease in Vermont must comply with:
 - (1) The Advanced Clean Trucks rule as incorporated by reference in Section 201 and in Title 13, California Code of Regulations Sections 1963 through 1963.5.
- (c) No *person*, including a *manufacturer* or *dealer*, shall deliver for sale or lease, offer for sale or lease, sell or lease, import, acquire, receive, purchase, or rent a *new vehicle* that is a 2026 or subsequent *model-year*

medium- and heavy-duty engine or vehicle, or trailer in Vermont unless the *vehicle* is *California-certified* and complies with the following:

- (1) All applicable emissions standards, testing procedures, warranty, reporting, recall and other applicable requirements of the Heavy-Duty Engine and Vehicle Omnibus Regulation as incorporated by reference in Section 201 of this Chapter and specified in Titles 13 and 17, California Code of Regulations; and
 - (2) All applicable emission standards, testing procedures, warranty, reporting, recall and other applicable requirements of the California Greenhouse Gas Emissions Standards for Medium- And Heavy-Duty Engines, Vehicles, and Trailers (Phase 2) as incorporated by reference in Section 201 of this Chapter and specified in Titles 13 and 17, California Code of Regulations.
- (d) Subsections 40-103(a-x) shall not apply to a *new vehicle*:
- (1) Defined as an emergency *vehicle*;
 - (2) For the purposes of Advanced Clean Trucks only, a *vehicle* defined as an “excluded bus” pursuant to Title 13, California Code of Regulations Section 1963(c)(11);
 - (2) With a right-hand drive configuration that is not available in a California-certified model, purchased by a rural route postal carrier and used primarily for work;
 - (3) Designed exclusively for off-highway use; or
 - (4) Certified to standards promulgated pursuant to the authority contained in 42 U.S.C. 7521 and which is in the possession of a *vehicle* rental agency in Vermont and is next rented with a final destination outside of Vermont.
- (e) Subsections 40-103(a-c) shall not apply to *new vehicles* in the following transactions:
- (1) A transfer by court decree;
 - (2) A transfer by inheritance;
 - (3) A purchase by a nonresident prior to establishing residency in Vermont; or
 - (4) A sale for the purpose of being wrecked or dismantled.

40-104 WARRANTY

- (a) For *California-certified vehicles* delivered for sale or lease in Vermont, each *manufacturer* shall provide a warranty for the ultimate purchaser and each subsequent purchaser that complies with the applicable warranty requirements of Title 13, California Code of Regulations Sections 1962.8, 2035 through 2038, 2040 and 2046.
- (b) Each *manufacturer* shall include the emission control system warranty statement required by Title 13, California Code of Regulations Sections 2039, modified by some means (e.g. printed within the text or a sticker) to clearly inform Vermont owners of *California-certified vehicles* that the California Warranty applies to the *vehicle*. This statement shall provide a telephone number appropriate for Vermont.

40-105 RECALL

For all *California-certified vehicles* registered in Vermont, each *manufacturer* shall undertake an action equivalent to that which is required by any order or enforcement action taken by *CARB*, or any voluntary or influenced emission related *recall* initiated by any *manufacturer* pursuant to Title 13, California Code of Regulations Sections 1962.7,

2101 through 2120, 2122 through 2133, 2135 through 2149, 2167, and 2168 unless within 30 days of *CARB* approval of said *recall*, the *manufacturer* demonstrates to the *Agency* that such *recall* is not applicable to *vehicles* registered in Vermont. Each *manufacturer* must send to owners of Vermont registered *California-certified vehicles* the same notice that is used for California owners required by Title 13, California Code of Regulations Sections 2118 or 2127, except that it should contain a telephone number appropriate for Vermont.

40-106 MANUFACTURER FLEET REQUIREMENTS

- (a) Each *manufacturer* shall meet the following fleet requirements for the *new vehicles* delivered for sale or lease, or for the purposes of Advanced Clean Trucks sold to the ultimate purchaser, in Vermont.
- (1) Effective for the 2004 through 2014 *model-years*, each *manufacturer* shall comply with the *fleet average* NMOG emission requirements (or NMOG + NOx for 2014 model year only) and LEV II phase-in requirements for passenger cars and light-duty trucks and, for 2000 and subsequent model-years, may earn and bank *NMOG credits*, both in accordance with Title 13, California Code of Regulations Section 1961, except *NMOG credits* earned prior to model-year 2004 shall be treated as though they were earned in model-year 2004.
 - (2) Effective for the 2004 through 2014 *model-years*, each *manufacturer* shall comply with the LEV II *medium-duty vehicle* phase-in requirements and, for 2004 through 2014 model-years, may earn and bank VECs, both in accordance with Title 13, California Code of Regulations Section 1961, except VECs earned prior to model-year 2007 shall be treated as though they were earned in model-year 2007. Starting with model-year 2007 through model year 2014, all medium-duty vehicles are subject to the LEV II standards in accordance with Title 13, California Code of Regulations Section 1961.
 - (3) Effective for the 2015 through 2025 *model-year* passenger cars and light-duty trucks, and 2015 through 2028 model-year medium-duty vehicles, each *manufacturer* shall comply with the *fleet average* NMOG + NOx emission requirements and the LEV III phase-in requirements, and may earn and bank NMOG + NOx credits or VECs as applicable, all in accordance with Title 13, California Code of Regulations Section 1961.2.
 - (4) Effective for the 2026 and subsequent model-years, each manufacturer shall comply with the fleet average NMOG + NOx emission requirements and the LEV IV phase-in requirements for passenger cars, light-duty trucks, and medium duty vehicles, and may earn and bank NMOG + NOx credits or VECs as applicable, in accordance with Title 13, California Code of Regulations Section 1961.4.
 - (5) Effective for the 2007 through 2008 model years, each manufacturer shall comply with the Zero Emission Vehicle sales requirement and, starting with 2000 model year *vehicles*, may earn and bank ZEV credits, both in accordance with Title 13, California Code of Regulations Sections 1962.
 - (6) Effective for the 2009 through 2017 *model years*, each *manufacturer* shall comply with the Zero Emission Vehicle sales requirement and, and starting with 2000 model year *vehicles*, may earn and bank ZEV credits, both in accordance with Title 13, California Code of Regulations Section 1962.1.
 - (7) Effective for 2018 through 2025 model years, each manufacturer shall comply with the Zero Emission Vehicle sales requirement and, and starting with 2000 model year *vehicles*, may earn and bank ZEV credits, both in accordance with Title 13, California Code of Regulations Section 1962.2.
 - (8) Effective for 2026 and subsequent model years, each manufacturer shall comply with the Zero Emission Vehicle sales requirements and, starting with 2024 model year vehicles, may earn and bank ZEV value, both in accordance with Title 13, California Code of Regulations Section 1962.4.
 - (9) Effective for the 2009 through 2016 model-years, each manufacturer shall comply with the fleet average emission greenhouse gas requirements for passenger cars, light-duty trucks, and medium-duty passenger *vehicles*, and for 2000 and subsequent model-years may earn and bank GHG credits, in accordance with Title 13, California Code of Regulations Section 1961.1.

- (10) Effective for the 2017 and subsequent model years, each manufacturer shall comply with the fleet average emission greenhouse gas requirements for passenger cars, light-duty trucks, and medium-duty passenger *vehicles*, and may earn and bank GHG credits, in accordance with Title 13, California Code of Regulations Section 1961.3.
- (11) Effective for the 2026 and subsequent *model years*, each manufacturer shall comply with the Advanced Clean Trucks sales requirement for medium and heavy-duty vehicles as applicable, and for 2023 and subsequent model years may earn, bank, and trade ZEV and NZEV credits both in accordance with Title 13, California Code of Regulations Sections 1963 through 1963.5.
- (12) Effective for the 2026 and subsequent model years, each manufacturer shall comply with the Heavy-Duty Engine and Vehicle Omnibus Regulation emissions standards for applicable medium- and heavy-duty engines and vehicles, and for 2024 and subsequent model years may earn, bank, and trade credits in accordance with Title 13, California Code of Regulations Sections 1956.8.
- (13) Effective for the 2026 and subsequent model years, each manufacturer shall comply with the Phase 2 greenhouse gas emissions standards for applicable medium and heavy-duty vehicles, and trailers, and for 2024 and subsequent model years may earn, bank and trade credits, in accordance with Title 17, California Code of Regulations Sections 95660 through 95664.

40-107 MANUFACTURER REPORTING REQUIREMENTS

(a) Delivery Reporting.

Each *manufacturer* shall submit annually, to the *Agency*, by March 1 following the end of each *model-year*, a report, itemized by test group and emission standard, documenting total *new vehicles* delivered for sale or lease in Vermont, as applicable.

(b) Fleet Reporting.

- (1) Each *manufacturer* shall submit annually to the *Agency*, by no later than May 1 following the end of each *model-year*, a report, itemized by test group and emission standard, that demonstrates that the *manufacturer* has met the fleet requirements of subsection 40-106(a) in Vermont.
- (2) If a *manufacturer* wants to bank *VECs* or GHG, NMOG, NMOG + NO_x, ZEV, or NZEV *credit* or *value*, the *manufacturer* shall submit annually, by no later than May 1 following the end of the *model-year*, a report which demonstrates that such *manufacturer* has earned *VECs* or GHG, NMOG, ZEV, or NZEV *credits* or *values* in Vermont. Credits or value are to be calculated in the same manner as required by CARB.

(c) Recall Reporting.

- (1) For information and not for approval by Vermont, each *manufacturer* shall submit, within 30 days of *CARB* approval, a copy of any *CARB* approved voluntary, influenced or ordered *recall* plan specified by Title 13, California Code of Regulations Sections 1962.7, 2114, 2125, and 2169 supplemented with the number of affected *vehicles* registered in Vermont.
- (2) For information and not for approval by Vermont, each *manufacturer* shall, upon request, submit *recall* campaign progress reports for *vehicles* registered in Vermont, within the timelines of, and containing the information required by, Title 13, California Code of Regulations Sections 1962.7, 2119, 2133, and 2169.7. Reports need not be submitted to the *Agency* if the equivalent reports have been waived by *CARB*.

(d) Documentation.

A *manufacturer*, a *dealer* or a transporter of *new vehicles* shall, upon request, provide to the Agency of Natural Resources or the Agency of Transportation any documentation, including but not limited to Vehicle Identification Numbers, which either Agency determines to be necessary for the effective administration and enforcement of this Chapter.

- (e) Reports and other information required by this subsection must be submitted to:

Director, Air Quality and Climate Division
Davis 4
One National Life Drive
Montpelier, VT 05620-3802.

40-108 INSPECTIONS

- (a) The Secretary of the Agency of Natural Resources or the Secretary of the Agency of Transportation or their designees may conduct inspections of any new and used *vehicles* and any related documentation for the purpose of determining compliance with the requirements of this Chapter.
- (1) Inspections may be conducted on any conveyance used to transport *new vehicles* or on any premises owned or controlled by any *dealer* or *manufacturer*.
 - (2) Inspections may extend to all emission-related parts and may require the on-premises operation and testing of an engine or *vehicle*.
 - (3) Inspections may include functional tests and other tests as necessary to verify compliance with this Chapter.
- (b) Upon request, during an inspection, such *dealer* or *manufacturer* must make available to either Agency any related records, including records documenting *vehicle* origin, certification, delivery, or sales and records of *emission* related part repairs performed under warranty.

40-109 SEVERABILITY

Each provision of this Chapter is severable, and in the event that any provision of this Chapter is held to be invalid, the remainder of the Chapter shall continue in full force and effect.

40-201 PROVISIONS OF THE CALIFORNIA CODE OF REGULATIONS INCORPORATED BY REFERENCE

Incorporation by reference date: [DATE].

Title 13 CCR	Title
Chapter 1	Motor <i>Vehicle</i> Pollution Control Devices.
Article 1	General Provisions.
1900	Definitions.
1903	Plans Submitted.
1904	Applicability to Vehicles Powered by Fuels Other Than Gasoline or Diesel.
Article 2	Approval of Motor <i>Vehicle</i> Pollution Control Devices (<i>New Vehicles</i>).

Title 13 CCR	Title
1956.8	Exhaust <i>Emissions</i> Standards and Test Procedures - 1985 and Subsequent Model Heavy-Duty Engines and <i>Vehicles</i> , 2021 and Subsequent Zero-Emission Powertrains, and 2022 and Subsequent Model Heavy-Duty Hybrid Powertrains.
1960.1	Exhaust <i>Emissions</i> Standards and Test Procedures - 1981 and through 2006 Model <i>Passenger Cars</i> , Light-Duty and <i>Medium-Duty Vehicles</i> .
1960.5	Certification of 1983 and Subsequent Model-Year Federally-Certified Light-Duty Motor Vehicles for Sale in California.
1961	Exhaust Emission Standards and Test Procedures – 2004 through 2019 Model Passenger Cars, Light-Duty Trucks, and Medium-Duty Vehicles.
1961.1	Greenhouse Gas Exhaust Emission Standards and Test Procedures – 2009 through 2016 Model Passenger Cars, Light-Duty Trucks, and Medium-Duty Vehicles.
1961.2	Exhaust Emission Standards and Test Procedures - 2015 through 2025 Model Passenger Cars and Light-Duty Trucks, and 2015 through 2028 Model Year Medium-Duty Vehicles.
1961.3	Greenhouse Gas Exhaust Emission Standards and Test Procedures - 2017 and Subsequent Model Passenger Cars, Light-Duty Trucks, and Medium-Duty Vehicles.
1961.4	Exhaust Emission Standards and Test Procedures - 2026 and Subsequent Model Passenger Cars, Light-Duty Trucks, and Medium-Duty Vehicles
1962	Zero-Emission <i>Vehicle</i> Standards for 2005 and through 2008 Model Year <i>Passenger Cars</i> , <i>Light-Duty Trucks</i> , and <i>Medium-Duty Vehicles</i> .
1962.1	Zero-Emission Vehicle Standards for 2009 through 2017 Model Year Passenger Cars, Light-Duty Trucks, and Medium-Duty Vehicles.
1962.2	Zero-Emission Vehicle Standards for 2018 through 2025 Model Year Passenger Cars, Light-Duty Trucks, and Medium-Duty Vehicles.
1962.3	Electric Vehicle Charging Requirements.
1962.4	Zero-Emission Vehicle Requirements for 2026 and Subsequent Model Year Passenger Cars and Light-Duty Trucks
1962.5	Data Standardization Requirements for 2026 and Subsequent Model Year Light-Duty Zero Emission Vehicles and Plug-in Hybrid Electric Vehicles
1962.6	Battery Labeling Requirements
1962.7	In-Use Compliance, Corrective Action and Recall Protocols for Zero Emission for 2026 and Subsequent Model Year Passenger Cars and Light-Duty Trucks
1962.8	Warranty Requirements for Zero Emission and Batteries in Plug-in Hybrid Electric 2026 and Subsequent Model Year Passenger Cars and Light-Duty Trucks
1963	Advanced Clean Trucks Purpose, Applicability, Definitions, and General Requirements
1963.1	Advanced Clean Trucks Deficits

Title 13 CCR	Title
1963.2	Advanced Clean Trucks Credit Generation, Banking, and Trading
1963.3	Advanced Clean Trucks Compliance Determination
1963.4	Advanced Clean Trucks Reporting and Recordkeeping
1963.5(a)(1)-(3)	Advanced Clean Trucks Enforcement
1964	Special Test Procedures for Certification and Compliance – New Modifier Certified Motor Vehicles.
1965	Emission Control, Smog Index, and Environmental Performance Labels — 1979 and Subsequent <i>Model-Year</i> Motor Vehicles.
1968.1	Malfunction and Diagnostic System Requirements - 1994 and Subsequent Model-Year <i>Passenger Cars, Light-Duty Trucks and Medium-Duty Vehicles</i> and Engines.
1968.2	Malfunction and Diagnostic System Requirements – 2004 and Subsequent Model-Year <i>Passenger Cars, Light-Duty Trucks and Medium-Duty Vehicles</i> and Engines.
1969	Motor Vehicle Service Information - 1994 and Subsequent Model <i>Passenger Cars, Light-Duty Trucks, and Medium-Duty Engines and Vehicles</i> , and 2007 and Subsequent Model <i>Heavy-Duty Engines</i> .
1971.1	On-Board Diagnostic System Requirements - 2010 and Subsequent Model-Year Heavy-Duty Engines
1976	Standards and Test Procedures for Motor Vehicle Fuel Evaporative <i>Emissions</i> .
1978	Standards and Test Procedures for <i>Vehicle Refueling Emissions</i> .
Article 6	<i>Emission Control System Warranty</i> .
2035	Purpose, Applicability, and Definitions.
2036	Defects Warranty Requirements for 1979 Through 1989 Model <i>Passenger Cars, Light-Duty Trucks, and Medium-Duty Vehicles</i> ; 1979 and Subsequent Model Motorcycles and Heavy-Duty <i>Vehicles</i> ; and Motor Vehicle Engines Used in Such <i>Vehicles</i> , and 2020 and Subsequent Model Year Trailers.
2037	Defects Warranty Requirements for 1990 and Subsequent Model <i>Passenger Cars, Light-Duty Trucks, Medium-Duty Vehicles, and Motor Vehicle Engines Used in Such Vehicles</i> .
2038	Performance Warranty Requirements for 1990 and Subsequent Model <i>Passenger Cars, Light-Duty Trucks, Medium-Duty Vehicles and Motor Vehicle Engines Used in Such Vehicles</i> .
2039	<i>Emissions Control System Warranty Statement</i> .
2040	<i>Vehicle Owner Obligations</i> .
2041	Mediation; Finding of Warrantable Condition.
2046	Defective Catalyst.
2047	Certification procedures for Used Modifier-certified Motor Vehicles.
Chapter 2	Enforcement of <i>Vehicle Emission Standards and Surveillance Testing</i> .

Title 13.CCR	Title
Article 1	Assembly-Line Testing.
2062	Assembly-Line Test Procedures - 1998 and Subsequent <i>Model-years</i> .
Article 1.5	Enforcement of Vehicle Emission Standards and Surveillance Testing for 2005 and Subsequent Model Year Heavy-Duty Engines and Vehicles
2065	Applicability of Chapter 2 to 2005 and Subsequent Model Year Heavy-Duty Engines and Vehicles
Article 2	Enforcement of New and In-Use <i>Vehicle</i> Standards.
2101	Compliance Testing and Inspection - New <i>Vehicle</i> Selection, Evaluation and Enforcement Action.
2109	New <i>Vehicle Recall</i> Provisions.
2110	Remedial Action for Assembly-Line Quality Audit Testing of Less Than a Full Calendar Quarter of Production Prior to the 2001 <i>Model-year</i> .
Article 2.1	Procedures for In-Use <i>Vehicle</i> Voluntary and Influenced <i>Recalls</i> .
2111	Applicability.
2112	Definitions.
	Appendix A to Article 2.1.
2113	Initiation and Approval of Voluntary and Influenced Emission-Related <i>Recalls</i> .
2114	Voluntary and Influenced <i>Recall</i> Plans.
2115	Eligibility for Repair.
2116	Repair Label.
2117	Proof of Correction Certificate.
2118	Notification.
2119	Recordkeeping and Reporting Requirements
2120	Other Requirements Not Waived.
2121	Penalties.
Article 2.2	Procedures for In-Use Vehicle Ordered <i>Recalls</i> .
2122	General Provisions.
2123	Initiation and Notification of Ordered Emission-Related <i>Recalls</i> .
2124	Availability of Public Hearing.
2125	Ordered <i>Recall</i> Plan.
2126	Approval and Implementation of <i>Recall</i> Plan.
2127	Notification of Owners.
2128	Repair Label.
2129	Proof of Correction Certificate.

Title 13 CCR	Title
2130	Capture Rates and Alternative Measures.
2131	Preliminary Tests.
2132	Communication with Repair Personnel.
2133	Recordkeeping and Reporting Requirements.
2134	Penalties.
2135	Extension of Time.
Article 2.3	In-Use <i>Vehicle</i> Enforcement Test Procedures.
2136	General Provisions.
2137	<i>Vehicle</i> , Engine, and Trailer Selection.
2138	Restorative Maintenance.
2139	Testing.
2140	Notification and Use of Test Results.
Article 2.4	Procedures for Reporting Failures of Emission-Related Components.
2141	General Provisions.
2142	Alternative Procedures
2143	Failure Levels Triggering <i>Recall</i> and corrective action.
2144	<i>Emission</i> Warranty Information Report.
2145	Field Information Report.
2146	<i>Emissions</i> Information Report.
2147	Demonstration of Compliance with <i>Emission</i> Standards.
2148	Evaluation of Need for <i>Recall</i> .
2149	Notification of Subsequent Action.
Article 5	Procedures for Reporting Failures of Emission-Related Equipment and Required Corrective Action
2166	General Provisions
2167	Required Recall and Corrective Action for Failures of Exhaust After-Treatment Devices, On-Board Computers or Systems, Urea Dosers, Hydrocarbon Injectors, Exhaust Gas Recirculation Valves, Exhaust Gas Recirculation Coolers, Turbochargers, Fuel Injectors.
2168	Required Corrective Action and Recall for Emission-Related Component Failures
2169	Required Recall or Corrective Action Plan.
2169.1	Approval and Implementation of Corrective Action Plan.
2169.2	Notification of Owners.
2169.3	Repair Label.
2169.4	Proof of Correction Certificate.
2169.5	Preliminary Tests.
2169.6	Communication with Repair Personnel.
2169.7	Recordkeeping and Reporting Requirements.

Title 13/CCR	Title
2169.8	Extension of Time.
Chapter 4	Criteria for the Evaluation of Motor Vehicle Pollution Control Devices and Fuel Additives.
Article 2	Aftermarket Parts.
2222	Add-On Parts and Modified Parts.
Chapter 4.4	Specifications for Fill Pipes and Openings of Motor <i>Vehicle</i> Fuel Tanks.
2235	Requirements.

Title 17/CCR	Title
Chapter 1	Air Resources Board
Subchapter 10	Climate Change
Article 4	Regulations to Achieve Greenhouse Gas Emission Reductions
Sub-article 12	Greenhouse Gas Emission Requirements for New 2014 and Subsequent Model Heavy-Duty Vehicles
95660	Purpose
95661	Applicability
95662	Definitions
95663	Greenhouse Gas Exhaust Emission Standards and Test Procedures for New 2014 and Subsequent Model Heavy-Duty Vehicles.

Agency of Natural Resources
REGULATION SUMMARY DOCUMENT
Vermont Low Emission Vehicle and Zero Emission Vehicle Proposed Rule

This document includes a summary of the proposed amendments to the Agency of Natural Resources' Low and Zero Emission Vehicle Rules, which adopt, via incorporation by reference, California's Advanced Clean Cars II, Advanced Clean Trucks, Low NOx Heavy-Duty Omnibus, and the Phase 2 Greenhouse Gas Rule. In this rulemaking, ANR proposes to amend existing rules and adopt new rules that reduce greenhouse gas and criteria air pollutant emissions from passenger cars, light-duty trucks, and medium- and heavy-duty vehicles and engines that are delivered for sale or placed in service in Vermont.

ANR has authority to adopt and amend these regulations pursuant to Section 177 of the Clean Air Act (CAA) and 10 V.S.A. §§558 and 567 of the Vermont Air Pollution Control Laws, which allow the ANR Secretary to set emission control requirements on sources of air contaminants in Vermont and specifically to control such emissions from motor vehicles through the prescription of requirements for the use of equipment that will reduce or eliminate emissions. ANR is also required by the Vermont Global Warming Solutions Act to adopt these rules, as they were incorporated into the Vermont Climate Council's Initial Climate Action Plan as part of a strategy to reduce emissions from the transportation sector in Vermont.

The original adoption and previous amendments of rules adopted pursuant to Section 177 of the CAA are found in the Vermont Department of Environmental Conservation Regulations Chapter 5 (Air Pollution Control), Subchapter XI (Low Emission Vehicle Program), and Appendix F (Provisions of the California Code of Regulations). In this rulemaking, ANR has created a new Chapter 40, entitled *Vermont Low Emission Vehicle and Zero Emission Vehicle Rules*, which will include existing requirements, proposed amendments, and new rules adopted pursuant to Section 177 of the CAA. Creating a new chapter allows ANR to update these rules on a more regular basis, as necessary to align with California's mobile sources program.

Background

In 1967, the federal Clean Air Act (CAA) established the framework for controlling mobile source (i.e., cars, trucks, buses, and other vehicles) emissions in the United States. Although most states were preempted by Section 209 of the CAA from adopting state vehicle emissions standards, California was granted a special exemption to the federal preemption due to the state's long-standing mobile sources program and unique air quality problems.¹ This exemption gave California the authority to set its own vehicle emission standards as long as such standards are at least as protective as the federal standards. The California Air Resources Board (CARB) develops and adopts specific rules and regulations needed to achieve healthful air quality and address climate change. The relevant CARB regulations are found in Title 13 (Motor Vehicles) and Title 17 (Public Health) of the California Code of Regulations (CCR).²

¹ 42 U.S.C. §7543.

² California Code of Regulations, Title 13, *Motor Vehicles*, <https://govt.westlaw.com/calregs/Browse/Home/California/CaliforniaCodeofRegulations?guid=I88D700E0D46911DE8879F88E8B0DAAAE&originationContext=documenttoc&transitionType=Default&contextData=%28sc.Default%29>; California Code of Regulations, Title 17, *Public Health*, <https://govt.westlaw.com/calregs/Browse/Home/California/CaliforniaCodeofRegulations?guid=IC39BB410D60711>

A subsequent amendment to the CAA added Section 177 that allows other states to adopt the California standards if they are “identical to the California standards” and California receives a waiver of preemption from implementing the federal motor vehicle standards from the U.S. Environmental Protection Agency (EPA).³ States may adopt California’s standards prior to EPA granting a waiver to California under Clean Air Act Section 209(b). Section 177 also requires that states adopting the California vehicle emission standards provide vehicle manufacturers with at least two model years’ lead time before the standards may be enforced⁴

Pursuant to Section 177, Vermont has the authority to regulate emissions from motor vehicles so long as those regulations are identical to California’s. Over the past two decades, Vermont has adopted many of California’s regulatory programs for light- and medium-duty vehicles, including the Low Emission Vehicle (LEV) program beginning with model year 2000 and Zero Emission Vehicle (ZEV) program for model year 2004 and beyond which were later combined into the Advanced Clean Cars (ACC) program for model years 2015 through 2025. The existing ACC requirements include a LEV program which focuses on the emissions of criteria air pollutants and greenhouse gases, and a ZEV program which requires auto manufacturers to deliver a certain percentage of battery electric and plug-in hybrid vehicles to Vermont.

Recognizing that emissions from medium- and heavy-duty vehicles and engines pose significant threats to public health and climate change, California has adopted regulations for these vehicles that reduce criteria air pollutant and greenhouse gas emissions and are more stringent than federal regulations. Until this rulemaking, these types of vehicles have historically been subject to the less stringent federal program.

In response to the threat of climate change, in September 2020 the General Assembly enacted the Global Warming Solutions Act (GWSA), Act 153, which established greenhouse gas emission reduction requirements and created a Climate Council charged with adopting an initial Climate Action Plan (CAP) in December 2021. The Initial Climate Action Plan directed ANR to adopt California’s Advanced Clean Cars II, Advanced Clean Trucks, the Low NOx Heavy-Duty Omnibus, and the Phase 2 Greenhouse Gas emission standards for trucks and trailers. 10 V.S.A. §593(a) of the GWSA requires ANR to adopt and implement rules consistent with the initial CAP by December 1, 2022; this timing will also allow Vermont to mirror California’s implementation of the rules and meet the model year lead time requirements described below.

The deployment of ZEVs also supports meeting goals identified in the 2020 Multi-State Medium- and Heavy-Duty Zero Emission Vehicle Memorandum of Understanding, which sets a new medium- and heavy-duty vehicle sales goal of 100% ZEVs by 2050. This multi-state MOU is separate from this rulemaking but is a relevant and significant regional effort that Vermont has joined with 16 other states, D.C. and the province of Quebec. As a result of this MOU, a multi-state comprehensive Action Plan containing more than 65 policy recommendations to support rapid electrification of the medium- and heavy-duty sectors was released. In development of the Action Plan, input from a wide variety of stakeholders including environmental justice and community-based organizations, truck and bus manufacturers, industry and technology experts, charging and fueling providers, utility companies,

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³ 42 U.S.C. § 7507.

⁴ A model year begins on January 2 of the prior calendar year.

public and private sector fleet representatives, commercial financing experts, and environmental advocates was provided. Also, the Moving Forward Network, a national network of organizations that center grassroots, frontline knowledge, expertise, and engagement with communities that bear negative impacts of the global freight transportation system, provided a comprehensive set of recommendations, which were used to shape the resulting Action Plan.

Advanced Clean Cars II

Advanced Clean Cars II (ACCII) is an amendment to Vermont's existing program (ACCI) which covers passenger cars and light-duty trucks and includes a low-emissions vehicle (LEV) program: criteria air pollutant exhaust emission standards and GHG exhaust emission standards, and zero-emission vehicle (ZEV) sales requirements. ACCII includes a LEV regulation that reduces criteria air pollutant emissions from new internal combustion engine vehicles (ICEVs) for model year 2026 and beyond, and a zero-emission vehicle (ZEV) regulation that increases the number of electric vehicles that must be provided by auto manufacturers for sale in Vermont. The current GHG exhaust emission standards from ACCI are being carried forward and are not being amended at this time.

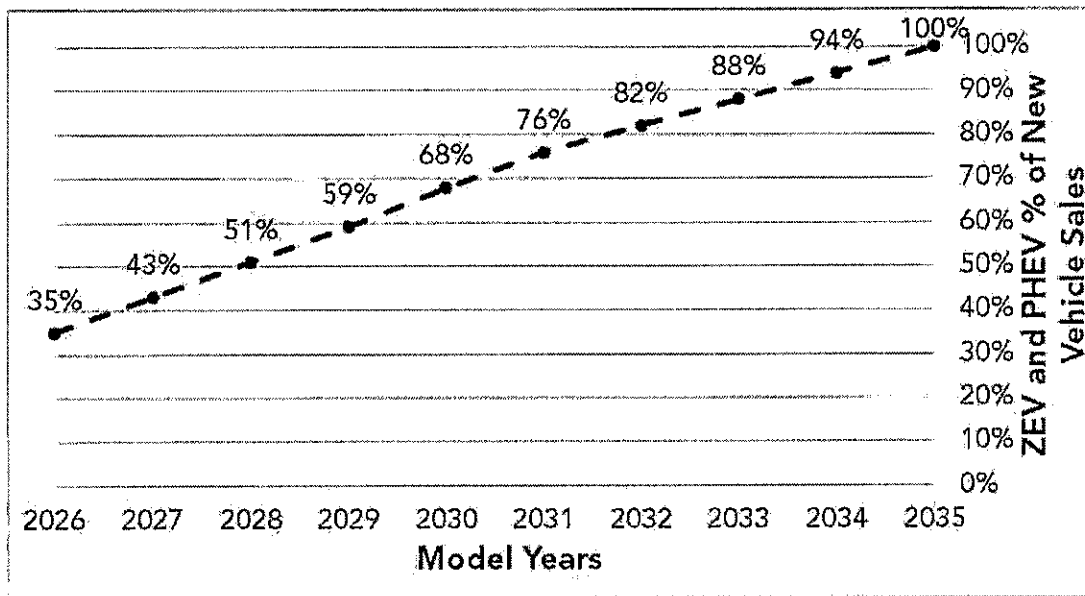
The ACCII LEV regulation requires manufacturers to produce vehicles certified to increasingly more stringent emission categories, according to schedules based on vehicle fleet emission averages for each manufacturer. The ACCII LEV regulation contains criteria air pollutant exhaust emission standards for 2026 and subsequent model year passenger cars, light-duty trucks, and medium-duty vehicles.⁵

The ACCII ZEV regulation requires that all passenger car and light-duty truck vehicles delivered by manufacturers for sale in Vermont by 2035 meet the definition of zero-emission vehicle (ZEV).⁶ A ZEV is a vehicle that produces zero vehicle exhaust emissions of any criteria air pollutant or greenhouse gas. The most common types of ZEVs are battery electric vehicles (BEV) and hydrogen fuel cell electric vehicles (FCEV). BEVs utilize batteries to store the electrical energy that powers the motor. FCEVs are fueled primarily by hydrogen stored on board to power a fuel cell in combination with a traction battery that produces electricity to power the electric motors, and may also have off-vehicle charge capability. Although not a ZEV by definition because of its internal combustion engine emissions, plug-in hybrid-electric vehicles (PHEV) use a battery to power an electric motor, as well as another fuel, such as gasoline or diesel, to power an internal combustion engine.

ACCII is not a requirement that consumers purchase an electric vehicle, or that dealers sell a required volume of electric vehicles. ACCII is a requirement imposed solely on auto manufacturers to deliver a certain annual percentage of ZEVs to Vermont, increasing to 100% ZEVs by 2035. The annual ZEV requirement aligns with where the market is expected to be in 2026 and continues to ramp up quickly. Small volume manufacturers must comply with the annual ZEV requirement beginning with the 2035 model year. Below is a graph summarizing the ZEV requirement:

⁵ CARB Proposed Regulation Order, 13 CCR § 1961.4, <https://ww2.arb.ca.gov/sites/default/files/barcu/regact/2022/accii/appa1.pdf>; CARB Proposed Regulation Order, 13 CCR § 1961.2, <https://ww2.arb.ca.gov/sites/default/files/barcu/regact/2022/accii/appa2.pdf>.

⁶ CARB Proposed Order, 13 CCR § 1962.4, <https://ww2.arb.ca.gov/sites/default/files/barcu/regact/2022/accii/appa5.pdf>.



Manufacturers earn credits for each certified ZEV produced for sale in Vermont and partial credits for PHEVs. These credits may be “banked” by their original earner or traded among compliance entities that have excess credits or need credits to achieve compliance. ZEV credits can also be earned by early compliance with ZEV requirements and through the environmental justice vehicle value option. The environmental justice vehicle value option incentivizes automakers to invest in community carshare programs, produce more affordable ZEVs, and ensure that more used ZEVs are available. To provide flexibility for manufacturers for model years 2026 through 2030, ACCII includes “pooling” which allows manufacturers to move a specified percentage of excess ZEV and PHEV credit values earned in one state for use in another state where there is a shortfall relative to the requirement. While historically this compliance flexibility mechanism has benefitted Vermont, it does have the potential to result in fewer compliant vehicles being delivered to Vermont.

ACCII also includes enhanced consumer protection measures to improve vehicle warranties and ensure durability of battery technology. These measures ensure both that ZEVs function as expected over their lifetimes and that consumers are not deterred from purchasing them both new and used. For example, ZEVs must meet the following requirements:

- Minimum certification range value greater than or equal to 200 miles, determined by California according to the 2026 ZEV and PHEV Test Procedures.
- Minimum durability requirement for useful life, designed to maintain 80% or more of the certification range value for a useful life of 10 years or 150,000 miles, which occurs first, and comply with data reporting requirements.
- Battery labeling requirements for recyclability and repurposing.
- Data standardization including battery state of health to determine the current level of deterioration in the battery relative to when it was new.
- Service information requirements to disclose repair information to independent repair shops.
- Minimum warranty requirements to provide protection for consumers that experience failures or defects early in the life of the vehicle.
- Onboard diagnostics requirements to track and diagnose emission failures.

- Charging requirements, including an on-board charger with a minimum charging capability.

The ACCII regulations are not currently adopted in California but will be by the time ANR's new regulations are adopted later this year. California proposed amendments to the existing ACC program on April 15, 2022, initiating the rulemaking process for ACCII. To adopt ACCII, California proposes to adopt CCR title 13, sections 1961.4, 1962.4, 1962.5, 1926.6, 1962.7, and 1962.8, and proposes to amend CCR title 13, sections 1900, 1961.2, 1961.3, 1962.2, 1962.3, 1965, 1968.2, 1969, 1976, 1978, 2037, 2038, 2112, 2139, 2140, 2147, 2317, 2903. These provisions will be incorporated by reference in Chapter 40 of the Vermont Department of Environmental Conservation Regulations. To adopt these standards for model year 2026, Vermont must adopt these regulations two years in advance of January 2, 2025, or January 2, 2023. For more information on ACCII, see CARB's Final Statement of Reasons and background materials.⁷ If Vermont fails to adopt these standards for model year 2026 by January 1, 2023, a revised rulemaking would need to be initiated with the implementation year being model year 2027 and ACCII would not apply to model year 2026.

Advanced Clean Trucks

The Advanced Clean Trucks Rule (ACT) is a new regulatory program that has been adopted and implemented in California and a number of other states, including New York, Massachusetts, New Jersey, and Oregon. Vermont has had limited to no regulations covering emissions from medium- and heavy-duty on-road vehicles in the past, so this would be a new rule and not an amendment.

The purpose of the ACT Rule is to accelerate the widespread adoption of ZEVs in the medium-and heavy-duty truck sector and reduce the amount of harmful emissions generated from on-road trucks. The ACT Rule applies to manufacturers of medium- and heavy-duty on-road vehicles over 8,500 pounds gross vehicle weight rating (GVWR)⁸ which includes passenger vans, buses, pickups, vocational trucks, box trucks, and tractor trailer combinations used locally and for long-haul on-road applications. Off-road vehicles and equipment are not part of the proposed regulation.

The ACT Rule has two main components, a manufacturers ZEV sales requirement and a one-time reporting requirement for large entities and fleets. In this rulemaking, ANR does not plan to adopt the one-time reporting requirement for large entities and fleets because ANR currently lacks the staff capacity and resources to facilitate data collection and then process the volume of data and information this requirement will generate. ANR may propose to adopt this reporting requirement at a later date as resources allow.

The ACT Rule requires manufacturers to sell ZEV trucks as an increasing percentage of their annual sales from model years 2026 to 2035.⁹ Manufacturers with annual state sales less than 500 units are exempt from the ZEV sales requirement but can opt-in to earn credits for selling ZEVs. As with ACCII, this is not a requirement that fleet owners or truck operators purchase electric vehicles, but a requirement on the

⁷ CARB, Advanced Clean Cars II, Final Statement of Reasons, <https://ww2.arb.ca.gov/rulemaking/2022/advanced-clean-cars-ii>; CARB, Advanced Clean Cars II, Public Materials, <https://ww2.arb.ca.gov/rulemaking/2022/advanced-clean-cars-ii>.

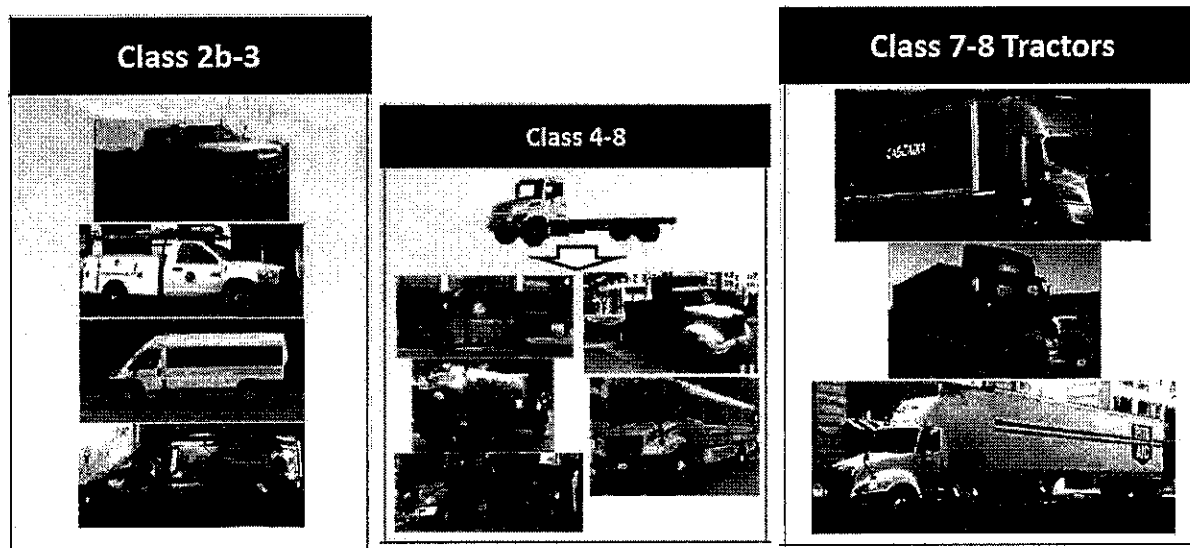
⁸ GVWR generally refers to the weight specified by the manufacturer as the loaded weight of a single vehicle.

⁹ CARB, Final Regulation Order, Advanced Clean Trucks, <https://ww2.arb.ca.gov/sites/default/files/barcu/regact/2019/act2019/fro2.pdf>.

manufacturers of medium- and heavy-duty trucks to transition from diesel trucks and vans to electric zero-emission trucks beginning in model year 2026.

The ACT requires the sale of at least 30% zero-emission trucks by 2030 (depending on vehicle classification). By model year 2035, zero-emission truck sales would need to be 55% of Class 2b – 3 truck sales, 75% of Class 4 – 8 truck sales, and 40% of truck tractor sales. Light-duty trucks (e.g., the Ford F-150, Chevrolet Silverado 1500, Ram 1500 and Toyota Tacoma) are covered under ACCII, discussed above.

Model Year	Class 2b-3	Class 4-8	Class 7-8 Tractors
2026	10%	13%	10%
2027	15%	20%	15%
2028	20%	30%	20%
2029	25%	40%	25%
2030	30%	50%	30%
2031	35%	55%	35%
2032	40%	60%	40%
2033	45%	65%	40%
2034	50%	70%	40%
2035+	55%	75%	40%



The Class 2b-3 group (GVWR of 8,501 - 14,000 lbs) consists mainly of full-size pickup trucks and vans.¹⁰ Examples of full-size vans include the Ford Transit, Mercedes Sprinter, and Chevrolet Express, and examples of full-size pickup trucks include the Ford F250 and RAM 2500. Class 3 includes the same types as Class 2b with a higher payload, but also includes a higher fraction of incomplete vehicles and stripped chassis (with a frame and engine but has no cab or body) that often become walk-in vans and box trucks assembled by a body manufacturer. This market is primarily served by many of the same manufacturers of lighter duty vehicles including Stellantis, Ford, General Motors, Mercedes, and Nissan.

¹⁰ Class 2a and 2b are subsections of Class 2; Class 2a refers to vehicles with a GVWR of 6,001-8,500 lb. and Class 2b refers to vehicles with a GVWR of 8,501-10,000 lb.

The Class 4-8 group (GVWR above 14,000 lbs, excluding tractors) mainly function in vocational applications as urban delivery vehicles, work-site trucks, and numerous other fields. The top three manufacturers in Class 4-8 are Ford, Freightliner, and International. The Class 7-8 tractor group (GVWR above 26,000 lbs) consists of on-road semi-trucks that haul trailers.

To determine compliance with the sales requirement, affected manufacturers incur deficits for each non-ZEV vehicle sold into Vermont starting with model year 2026. The deficit is calculated as the product of the model year percentage requirement from the table above, and the appropriate weight class modifier for each vehicle. Every model year, the deficits generated by each vehicle are summed for each vehicle group.

These deficits must be met with compliance credits generated from producing and selling ZEVs to the ultimate purchaser in Vermont, with the opportunity to earn compliance credits starting with model year 2023. To qualify for credits, ZEVs sold by manufacturers must meet the Zero-Emission Powertrain (ZEP) Certification requirements. Partial credits from selling near-zero emission vehicles (NZEVs) can be used to offset up to half of the manufacturer's annual deficits through model year 2030. ZEV and NZEV credits may be traded, sold, or otherwise transferred between manufacturers. Compliance is achieved when the manufacturer's total credits offset their total deficits.

California adopted the ACT regulation on January 26, 2021 at California Code of Regulations title 13 sections 1963 through 1963.5 and sections 2012 through 2012.2. These provisions will be incorporated by reference in Chapter 40 of the Vermont Department of Environmental Conservation Regulations. Vermont will not be able to adopt this rule in time to mirror the implementation date in California due to the two-model year lead time requirement explained in the background above. To maximize emission reductions projected to be achieved via the ACT rule starting with model year 2026, ANR must adopt this rule by January 1, 2023. For more information on ACT, see CARB's Final Statement of Reasons.¹¹

Heavy-Duty Engine and Vehicle Omnibus Rule

The Heavy-Duty Engine and Vehicle Omnibus (HD Omnibus) Rule and associated amendments require NOx emissions reductions from new on road heavy-duty engines and vehicles, and ensure emission reductions are maintained as those engines and vehicles are operated.¹² The HD Omnibus Rule requires NOx emission reductions starting in model year 2026, and a 90% reduction for model year 2027 engines. While the HD Omnibus is not considered to have a significant impact on GHG emission reductions, the rule remains a necessary component of the suite of rules because it is legally and substantively complimentary to the compliance and goals of the other rules (ACT, Phase 2 GHG rule) proposed.

The HD Omnibus Rule includes the following amendments summarized below:

- Exhaust Emissions Standards and Test Procedures for 2024 and Subsequent Model Year Heavy-Duty Engines and Vehicles,

¹¹ CARB, Advanced Clean Trucks Regulation, Final Statement of Reasons, <http://ww2.arb.ca.gov/sites/default/files/barcu/regact/2019/act2019/fsor.pdf>.

¹² CARB, Title 13, Final Regulation Order, <https://ww2.arb.ca.gov/sites/default/files/barcu/regact/2020/hdomnibuslownox/froa-1.pdf>; CARB, Title 17, Final Regulation Order, <https://ww2.arb.ca.gov/sites/default/files/barcu/board/rulemaking/hdomnibuslownox/froa-2.pdf>.

- Heavy-Duty On-Board Diagnostic System Requirements,
- Heavy-Duty In-Use Testing Program,
- Emissions Warranty Period and Useful Life Requirements,
- Emissions Warranty Information and Reporting Requirements, and Corrective Action Procedures,
- In-Use Emissions Data Reporting Requirements,
- Phase 2 Heavy-Duty Greenhouse Gas Regulations, and
- Powertrain Test Procedures.

The HD Omnibus includes exhaust emission standards for low oxides of nitrogen (NO_x) and particulate matter (PM) that would apply to heavy-duty Otto-cycle and diesel engines intended for use in vehicle service classes with gross vehicle weight ratings (GVWR) greater than 10,000 pounds.

The HD Omnibus Rule includes an emissions averaging, banking, and trading program that would allow manufacturers that elect to produce and certify heavy-duty zero-emission vehicles (ZEV) to generate NO_x credits, in order to incentivize the sales of heavy-duty ZEVs earlier than would be required by the Advanced Clean Trucks (ACT) Regulation.

To legally sell new engines, manufacturers must certify that their engines will comply with applicable emission standards throughout a specified period called the regulatory useful life. This ensures that manufacturers consider deterioration in emissions performance in the initial design of the engine. Manufacturers demonstrate that the emissions from engines meet emission standards at the time of certification using a durability demonstration program (DDP) which simulates heavy-duty engine and emission-related control component aging throughout the applicable useful life period.

To help ensure that emission controls are sufficiently durable to control emissions over applicable useful life periods, and well-maintained and repaired when needed, the HD Omnibus Rule lengthens the criteria pollutant emissions warranty and useful life period requirements for heavy-duty vehicles and engines. For components that fail under warranty, manufacturers may be required to report certain data to CARB and Vermont. If failure rates are high enough, manufacturers are required to conduct corrective actions such as recalling faulty components.

The HD Omnibus Rule requires manufacturers to test engines while they are operated on the road using portable emissions measurement systems. All heavy-duty engine manufacturers must conduct heavy-duty in-use testing (HDIUT) on their engine families, as specified by CARB which evaluates the in-use test data via the not-to-exceed (NTE) method. CARB also has the ability to independently test any engine family through CARB's in-house Heavy-Duty In-Use Compliance Program (HDIUC). Engine families that fail test requirements are subject to potential recall.

The HD Omnibus provides manufacturers an option to certify hybrid powertrains to criteria pollutant emission standards using specified hybrid-powertrain testing procedures. The hybrid-powertrain testing procedures would align with federal powertrain testing procedures and would be based on the U.S. EPA Phase 2 GHG technical amendments for powertrain testing. Powertrain testing provides an alternative to testing just the engine of a vehicle and enables manufacturers to quantify the impact of vehicle technologies such as hybridization that cannot be easily tested on an engine dynamometer.

California adopted HD Omnibus regulations on September 9, 2021 by amending California Code of Regulations title 13 sections 1900, 1956.8, 1961.2, 1965, 1968.2, 1971.1, 1971.5, 2035, 2036, 2111, 2112, 2113, 2114, 2115, 2116, 2117, 2118, 2119, 2121, 2123, 2125, 2126, 2127, 2128, 2129, 2130, 2131, 2133, 2137, 2139, 2140, 2141, 2142, 2143, 2144, 2145, 2146, 2147, 2148, 2149, 2423, and 2485 and 17 CCR 95662 and 95663 and adopting new 13 CCR 2139.5, 2166, 2166.1, 2167, 2168, 2169, 2169.1, 2169.2, 2169.3, 2169.4, 2169.5, 2169.6, 2169.7, 2169.8, and 2170. These provisions will be incorporated by reference in Chapter 40 of the Vermont Department of Environmental Conservation Regulations. For more information on the HD Omnibus Rule, see CARB's Final Statement of Reasons.¹³

Phase 2 Greenhouse Gas (GHG) Rule

The Phase 2 GHG Rule sets standards to reduce GHG emissions associated with medium- and heavy-duty engines, vocational vehicles¹⁴, heavy-duty pick-up trucks and vans (PUVs)¹⁵, and applicable tractors and trailers. The Phase 2 GHG Rule requires manufacturers to improve existing technologies or develop new technologies to meet the GHG emission standards.¹⁶ It also amends requirements for glider vehicles, glider engines, and glider kits.¹⁷

The Phase 2 GHG Rule sets new more stringent GHG emission standards for medium- and heavy-duty engines, tractors, vocational vehicles, PUVs, and trailers that are sold in Vermont.¹⁸ These emission standards largely harmonize with the structure, timing, and stringency of federal Phase 2 standards jointly adopted by the U.S. EPA and the Department of Transportation's National Highway Traffic Safety Administration in 2016, providing nationwide consistency for engine and vehicle manufacturers.¹⁹ The Phase 2 GHG requirements would apply to model year 2026 and newer Class 2b to 8 medium- and heavy-duty vehicles with greater than 8,500 pounds GVWR and the engines that power them, except for medium-duty passenger vehicles already covered in the light-duty regulations. To meet the proposed

¹³ CARB, Heavy-Duty Engine and Vehicle Omnibus Regulation, Final Statement of Reasons for Rulemaking,

<https://ww2.arb.ca.gov/sites/default/files/barcu/board/rulemaking/hdomnibuslownox/fsor.pdf>.

¹⁴ Vocational vehicles include, but are not limited to, delivery vehicles, refuse vehicles, and transit buses and have three regulatory categories according to GVWR: light heavy-duty (LHD) vehicles that range from 8,501 to 19,500 pounds, medium heavy-duty (MHD) vehicles that range from 19,501 to 33,000 pounds, and heavy heavy-duty (HHD) 1-4 vehicles that have greater than 33,000 pounds.

¹⁵ In the U.S. EPA's Phase 2 GHG Rule, EPA uses the term "heavy-duty pickups and vans" while the California regulation uses the term PUVs for these same vehicle types (i.e., class 2b vehicles with GVWR of 8,501 to 10,000 pounds and class 3 vehicles with GVWR of 10,001 to 14,000 pounds).

¹⁶ CARB, Final Regulation Order for Phase 2 Greenhouse Gas Regulations and Tractor-Trailer GHG Regulations, <https://ww2.arb.ca.gov/sites/default/files/barcu/regact/2018/phase2/finalatta.pdf>.

¹⁷ A "glider vehicle" is a vehicle where the chassis and cab assembly is produced by a vehicle manufacturer without a new engine, transmission, or rear axle and a third party installs an engine, transmission, and/or rear axle to complete the vehicle.

¹⁸ Greenhouse Gas Exhaust Emission Standards and Test Procedures for New 2014 and Subsequent Model Heavy-Duty Vehicles, 17 CCR § 95663.

¹⁹ Final Rule for Phase 2 Greenhouse Gas Emissions Standards and Fuel Efficiency Standards for Medium- and Heavy-Duty Engines and Vehicles, <https://www.epa.gov/regulations-emissions-vehicles-and-engines/final-rule-phase-2-greenhouse-gas-emissions-standards>. Note, CARB and U.S. EPA use different terminology for vehicles in various weight classes. The main difference is the use of the terms medium-duty vehicles and medium-duty engines.

standards, regulated manufacturers are expected to apply GHG reducing technologies, and may additionally elect to take advantage of credit opportunities.

For medium- and heavy-duty vehicles, the Phase 2 GHG requirements would apply to model year 2026 and newer class 2b to 8 medium- and heavy-duty vehicles with greater than 8,500 pounds GVWR and the engines that power them, except for medium-duty passenger vehicles already covered in the light-duty regulations.

For vocational vehicles, the Phase 2 GHG Rule establishes CO₂ standards (in grams emitted from carrying a ton of cargo over a distance of one mile (g/ton-mile)) for vocational vehicles that fall within 15 subcategories, distinguished by GVWR, duty cycle, and engine type (diesel vs. gasoline). Manufacturers of motor homes, coach buses, other buses (excluding transit buses), school buses, refuse trucks, cement mixers, and emergency vehicles have an option to certify those vehicles with less stringent standards than the primary vocational standards.

For PUVs, the Phase 2 emission standards are based on a “work factor” attribute that combines truck payload and towing capabilities, with an added adjustment for 4-wheel drive vehicles. There are separate target curves for diesel-powered and gasoline-powered vehicles. The PUV standards are expressed in g-CO₂/mile. PUVs, many of which are ¾ and 1-ton pick-up trucks, 12- and 15- passenger vans, and large work vans, are comprised of two classes of vehicles: Class 2b and 3. Heavy-duty vehicles with GVWR between 8,501 and 10,000 lbs. are classified in the industry as Class 2b motor vehicles. Heavy-duty vehicles with GVWR between 10,001 and 14,000 lbs. are classified as Class 3 motor vehicles.

For tractors, Phase 2 emissions standards apply to ten subcategories of on-road tractors, Class 7 and 8 and above 26,000 pounds GVWR. The engine and vehicle technologies employed to meet these standards will vary by tractor subcategory.

For trailers, the Phase 2 GHG Rule establishes separate standards for full aero box vans, partial aero box vans, non-aero box vans, and non-box trailers. A full aero box van is a box van that does not have any side or rear work performing equipment that would inhibit the application of aerodynamic technologies. A partial-aero box van has either side or rear work-performing equipment, but not both. A non-aero box van has both side and rear work performing equipment. Examples of work performing equipment include lift gates, access doors, and belly boxes. Examples of non-box trailers include flatbed, tanker, and container chassis trailers. The federal Phase 2 regulation also establishes separate standards for long box vans and short box vans. A short box van is less than or equal to 50 feet in length. A long box van is greater than 50 feet in length.

The exhaust emission standards specified in this rule apply to trailers based on the effect of trailer designs on the performance of the trailer in conjunction with a tractor; this accounts for the effect of the trailer on the tractor’s exhaust emissions, even though trailers themselves have no exhaust emissions. Trailer fleet owners have the option of either purchasing Phase 2 certified trailers, or installing Phase 2 approved aerodynamic technologies and low-rolling resistance (LRR) tires to meet the requirements.

Additional elements of the Phase 2 GHG Rule include:

- Phase 2 certification requires manufacturers to submit certification information directly to CARB for an independent review and approval. Engine and vehicle families for which U.S. EPA has

issued a federal Certificate of Conformity would not be automatically “deemed to comply” with the California Phase 2 requirements.

- Additional vehicle labels are required for vocational vehicles and tractors to identify emission control systems that can be visually inspected by enforcement staff.
- Additional reporting of engine and A/C system-related information is required by manufacturers in initial certification information and each certified vehicle’s end-of-year report.
- Manufacturers of motor homes, coach buses, school buses, refuse trucks, cement mixers, and emergency vehicles have an option to certify those vehicles with a less stringent process called “custom chassis”. Custom chassis standards are significantly less stringent than the primary vocational vehicle standards and include a simplified certification process. This optional less-stringent standard is not available for transit buses.
- Additional credit provisions would encourage the use of low global warming potential (GWP) refrigerants, the sale of PHEVs with a minimum all-electric range and low NOx emissions, and the manufacture of lower-emitting transit buses.
- Additional “light-duty style” consumer labels required for PUVs to provide consumers with easy to read information on the relative GHG emission performance of a particular PUV model as compared to other similar PUVs.

California adopted the federal Phase 2 GHG regulations plus California distinctions on December 11, 2018 by amending California Code of Regulations title 13 sections 1956.8, 1961.2, 1965, 2036, 2037, 2065, 2112, and 2141 and 17 CCR 95662 and 95663. ANR is proposing to adopt these amendments, as well as to adopt 17 CCR 95660 (Purpose) and 95661 (Applicability), which is part of California’s Phase 2 GHG Standards, but which were pre-existing sections California did not need to amend. These provisions will be incorporated by reference in Chapter 40 of the Vermont Department of Environmental Conservation Regulations. For more information on the Phase 2 GHG Rule, see CARB’s Final Statement of Reasons.²⁰

²⁰ CARB, Final Statement of Reasons for Rulemaking, <https://ww2.arb.ca.gov/sites/default/files/barcu/regact/2018/phase2/fsor.pdf>; see also CARB, Initial Statement of Reasons, <https://ww2.arb.ca.gov/sites/default/files/barcu/regact/2018/phase2/isor.pdf>.

Supplemental Information

for

Vermont’s Low Emission Vehicle and Zero Emission Vehicle Proposed Rules

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1 Background

This document includes technical support and supplemental information for the Agency of Natural Resources’ Low Emission Vehicles and Zero Emission Vehicle proposed rules, which incorporate by reference California’s Advanced Clean Cars II, Advanced Clean Trucks, the Low NOx Heavy-Duty (HD) Omnibus, and Phase 2 Greenhouse Gas emission standards for trucks and trailers. These rules were incorporated in Vermont’s Initial Climate Action Plan as part of the strategy to reduce emissions from Vermont’s transportation sector, and pursuant to the Vermont Global Warming Solutions Act, ANR is required to adopt these rules on or before December 1, 2022.

Supplemental information as referenced and required in the Economic Impact Statement, the Environmental Impact Statement, and Scientific Information Statement in the Standardized Rule Forms required by the Vermont Administrative Procedure Act is included herein.

2 Economic Impact Statement Supplemental Information

2.1 Summary of the rules

Emissions from mobile sources are the greatest contributor to emissions of greenhouse gases (GHG) and criteria pollutants¹ and greenhouse gases (GHG) in Vermont, accounting for approximately 40% of statewide GHG emissions and about 51%² of non-biogenic ozone precursor emissions (including nitrogen oxides (NOx) and volatile organic compounds). In this rulemaking, the Agency of Natural Resources (ANR) proposes to adopt or amend key regulations that reduce greenhouse gas and criteria pollutant emissions from passenger cars, light-duty trucks, and medium- and heavy-duty vehicles that are delivered for sale or placed in service in Vermont. This suite of rules includes the adoption of California’s Advanced Clean Trucks Rule, the Low NOx Heavy-Duty Omnibus Rule, and the Phase 2 Greenhouse Gas Rule, and amendments to California’s Advanced Clean Cars program which was originally adopted by Vermont in 2012³ and incorporates previously adopted rules to control criteria pollutants and GHG emissions. The Advanced Clean Trucks Rule (ACT) requires the sale of at least 30% zero-emission trucks by 2030 (depending on vehicle classification). The Low NOx Heavy-Duty Vehicle Omnibus Rule (HD Omnibus) requires a 90% reduction in NOx emissions for model year (MY) 2027

¹ Criteria pollutants are those classified as such pursuant to the Clean Air Act: Oxides of nitrogen, Sulphur dioxide, Carbon monoxide, lead, ozone, and particulate matter.

² EPA - 2017 National Emissions Inventory: <https://www.epa.gov/air-emissions-inventories/2017-national-emissions-inventory-nei-data#dataq>

³ Prior to 2012, Vermont adopted California vehicle emissions standards that were later combined into California’s Advanced Clean Cars program.

engines. The Phase 2 Greenhouse Gas Rule (Phase 2 GHG) sets greenhouse gas emission standards for heavy duty trucks and truck trailers. Advanced Clean Cars II (ACCII) requires that all passenger car and light-duty truck vehicles delivered for sale by 2035 meet the definition of zero-emission vehicle and will further reduce smog-forming and GHG emissions from new internal combustion engine vehicles (ICEVs). For a more detailed summary of each rule and adopting authority, see the Regulation Summary Document.

2.2 Background and analysis

The proposed regulations will result in reduced GHG, NOx and PM2.5 emissions. Each of these pollutants presents a distinct set of challenges and risks to public health and the environment.

GHGs contribute to climate change causing increased risks to public health and safety, food and water resources, infrastructure, and ecosystems. Additional details on GHG emission impacts can be found in Environmental Impact Supplemental Information, below.

NOx are a group of highly reactive compounds that pose direct human health impacts, such as irritation of the respiratory tract, and the worsening or triggering of asthma.⁴ These gases are also precursor pollutants that undergo complex chemical reactions in the atmosphere to form other air pollutants of concern, such as PM2.5 and ground-level ozone (also known as smog). Breathing air with elevated concentrations of ozone is especially harmful to children, the elderly, and people of all ages who have asthma and other respiratory impairments. Breathing ozone can trigger a variety of health issues ranging from coughing to chest pain, to reduced lung function or damage.⁵ NOx also contributes to the formation of acid rain⁶ and visibility impairment (haze)⁷ in Vermont.

PM2.5 is emitted directly from vehicle exhaust and formed through secondary reactions with NOx and other pollutants in the atmosphere. PM2.5 can be inhaled deeply into the lungs and transferred into the bloodstream resulting in significant health problems, such as reduced lung function, worsened asthma, non-fatal heart attacks, and premature death in individuals with heart or lung disease.⁸

To complete a thorough and sophisticated analysis of the emissions and economic benefits and impacts of the suite of rules proposed, Vermont is collaborating with several other "Section 177 states" and the Northeast States for Coordinated Air Use Management (NESCAUM). This analysis uses models such as the MOtor Vehicle Emission Simulator (MOVES)⁹, the CO-Benefits Risk Assessment Health Impacts Screening and Mapping Tool (COBRA)¹⁰, and other tools to aid in understanding the how implementation of these rules will benefit Vermonters, and what economic impacts may result.

⁴ EPA – Basic Information about NO2 webpage: <https://www.epa.gov/no2-pollution/basic-information-about-no2>

⁵ EPA – Health Effects of Ozone Pollution webpage: <https://www.epa.gov/ground-level-ozone-pollution/health-effects-ozone-pollution>

⁶ EPA – Acid Rain webpage: <https://www.epa.gov/acidrain>

⁷ EPA – Visibility and Regional Haze website: <https://www.epa.gov/visibility>

⁸ EPA – Health and Environmental Effects of Particulate Matter (PM): <https://www.epa.gov/pm-pollution/health-and-environmental-effects-particulate-matter-pm>

⁹ <https://www.epa.gov/moves>

¹⁰ <https://www.epa.gov/cobra>

This Technical Support Document (TSD) also relies on the comprehensive analysis of costs and other impacts performed by the California Air Resources Board and is extrapolated here to apply to Vermont and the expected impacts from the adoption of this suite of rules locally.

2.3 Affected parties

2.3.1 Costs and benefits to individuals: ACCII

The proposed regulation will benefit Vermonters mainly from the reductions in NOx resulting in reduced ozone exposure and reduced PM exposure from the secondary formation of NOx and PM2.5, improving Vermont air quality and reducing adverse health impacts. The reduction of GHG emissions will also reduce the future social costs of carbon emissions, which is the monetized value of the damages to society caused by each additional increment of CO₂ emissions, as discussed below. Further, ANR is required to adopt these rules pursuant to the Global Warming Solutions Act, as they were incorporated into the Initial Climate Action Plan.

The proposed ACCII regulation will reduce NOx, PM2.5, and GHG emissions. Reductions in NOx and PM2.5 emissions result in health benefits for individual Vermonters, including reduced instances of premature deaths, hospitalizations for cardiovascular and respiratory illnesses, and emergency room visits.

Using U.S. EPA’s COBRA screening model, NESCAUM assisted Vermont in calculating the estimated economic value of the health benefits associated with the adoption of the proposed rules. Utilizing the COBRA model is generally consistent with EPA practice for estimating avoided health impacts and monetized benefits. The COBRA model estimates impacts to particulate matter (PM) air pollution concentrations, which are translated into health outcomes. Table 1 shows the estimated total cost savings from avoided premature deaths, avoided hospitalizations for cardiovascular and respiratory illnesses, and avoided emergency room visits due to a reduction in criteria pollutant emissions resulting from the proposed ACCII regulation for the year 2040 in Vermont, relative to the baseline. Note that this analysis does not include costs avoided due to reductions in GHG emissions. See below for a discussion of Social Cost of Carbon benefits resulting from GHG reductions associated with ACCII.

Proposed Regulations	Valuation	Year	Total Costs Avoided
ACC II	\$2018	2040	\$373,000-840,000

Table 1: Annual COBRA-estimated economic values of Vermont adopting ACCII, in US dollars for the year 2040. Total costs avoided are due to criteria pollutant emission reductions.

Notes:

1. COBRA version 4.0.
2. Discount rate of 3%.

The proposed ACCII regulations account for GHG benefits in terms of carbon dioxide (CO₂) emissions avoided. The social cost of carbon (SC-CO₂) is an estimate of the monetized value of long-term impacts (economic, health and environmental) from climate change as a result of a single metric ton increase in

CO2 emissions in a given year. ¹¹ For a discussion of the impacts of climate change, please refer to the Environmental Impact Statement starting on page 17. Estimates of the Social Cost of Carbon are calculated in four steps using specialized computer models that: (1) Predict future emissions based on population, economic growth, and other factors, (2) Model future climate responses, such as temperature increase and sea level rise, (3) Assess the economic impact that these climate changes will have on agriculture, health, energy use, and other aspects of the economy, and (4) Convert future damages into their present-day value and add them up to determine total damages.¹²

This analysis utilizes the Vermont Climate Council recommended SC-CO2 values and discount rates, which is a method of placing a present value on costs or benefits that will occur at a future date, identified in the *Initial Vermont Climate Action Plan*.¹³ Because the SC-CO2 is highly sensitive to the discount rates applied, the range of discount rates from 1% to 3% is used to illustrate the varying magnitude of possible economic outcomes, however, the Council determined it was reasonable to use the SC-CO2 value developed using the central discount rate of 2% for the Vermont Climate Action Plan. Table 2 shows the estimated avoided social costs based on the GHG emissions reductions benefits from the proposed ACC II regulation from 2026 through 2040.

Table 2: 2026-2040 Statewide Estimated Avoided Social Cost of CO2 from ACCII vehicle rules

Year	3% Average Discount Rate		2% Average Discount Rate		1% Average Discount Rate	
	Value (2020\$/metric ton CO ₂)	Cost Avoided	Value (2020\$/metric ton CO ₂)	Cost Avoided	Value (2020\$/metric ton CO ₂)	Cost Avoided
2025	56	\$0	129	\$0	418	\$0
2026	57	\$1,632,352	131	\$3,751,545	421	\$12,056,492
2027	59	\$4,396,029	132	\$9,835,183	423	\$31,517,290
2028	60	\$7,827,762	134	\$17,482,002	426	\$55,577,111
2029	61	\$11,803,968	136	\$26,317,043	428	\$82,821,283
2030	62	\$16,297,046	137	\$36,011,215	430	\$113,027,900
2031	63	\$21,645,039	139	\$47,756,514	433	\$148,766,695
2032	64	\$27,309,283	141	\$60,165,764	435	\$185,617,782
2033	65	\$33,048,083	142	\$72,197,350	437	\$222,184,803
2034	66	\$39,138,873	144	\$85,393,905	440	\$260,925,820
2035	67	\$45,259,739	146	\$98,625,699	442	\$298,579,172
2036	69	\$51,967,387	147	\$110,713,130	444	\$334,398,841

¹¹ The National Academy of Sciences defines the Social Cost of Carbon as “an estimate, in dollars, of the present discounted value of the future damage caused by a metric ton increase in carbon dioxide (CO2) emissions into the atmosphere in that year or, equivalently, the benefits of reducing CO2 emissions by the same amount in that year.”

¹² Resources for the Future, Social Cost of Carbon 101. https://www.rff.org/documents/2153/SCC_Explainer.pdf

¹³ Vermont Climate Council, *Initial Vermont Climate Action Plan*, December 2021.

<https://climatechange.vermont.gov/sites/climatecouncilsandbox/files/2021-12/Initial%20Climate%20Action%20Plan%20-%20Final%20-%202012-1-21.pdf>

2037	70	\$57,183,745	149	\$121,719,685	446	\$364,342,144
2038	71	\$61,730,493	151	\$131,285,979	449	\$390,380,163
2039	72	\$65,632,506	152	\$138,557,513	451	\$411,114,726
2040	73	\$68,937,818	154	\$145,430,465	453	\$427,792,213
TOTAL		\$513,810,122		\$1,105,242,991		\$3,339,102,434

The proposed regulation imposes requirements on vehicle manufacturers to produce and deliver ZEVs for sale. Individuals are not required to purchase ZEVs under the proposed regulation. If an individual chooses to purchase electric vehicle an impact on the individual vehicle owners will be expected in the form of operation and ownership costs. These costs include the costs impacts of installing an electrical receptacle for electric vehicles supply equipment (EVSE) for purchasers of ZEVs, fuel costs, difference in maintenance costs, registration costs, and insurance costs over a ten-year period. These costs are combined with the incremental vehicles prices to estimate the total cost of ownership (TCO) during the period of proposed regulation. Two analyses of the TCO for individual vehicle owners conducted by ANR in consultation with Atlas Public Policy concludes that operational savings will offset any incremental costs of the initial electric vehicle purchase. The first analysis in Table 3 compares the TCO to a Vermont single-family home over 10 years of a gasoline powered half-ton 4 -wheel drive light-duty truck to an electric half-ton 4-wheel-drive light-duty truck. The analysis shows a total incremental cost-savings of nearing \$2,000 over the 10-year period.

Table 3: Total cost of ownership over 10 years for individual Ford F-150 Pick-up Lighting 4WD to a Ford F-150 Pick-up 4WD in a single-family home.

	Incremental Cost (2022\$) for 2030 MY BEV (300-mile range) w/ home charger
Incremental Net present value (NPV) of vehicle price (loan principal)	\$3,357
Incremental NPV of vehicle price financing (loan interest)	\$556
Incremental cost of home level 2 charging circuit	\$680
Incremental NPV of depreciated value after 10 years	\$1,605
Incremental NPV of fuel costs	(\$6,343)
Incremental NPV of maintenance costs	(\$3,509)
Incremental NPV of insurance	\$1,480
Incremental NPV of taxes & Fees	\$255
Incremental TCO (10 years)	(\$1,918)

The second analysis in Table 4 compares the TCO to a Vermont single-family home over 10 years of a gasoline powered all-wheel drive SUV “crossover” to an electric all-wheel drive SUV crossover. The analysis shows a total incremental cost-savings of nearly \$3,400 over the 10-year period.

Table 4: Total cost of ownership over 10 years for individual Kia EV6 AWD (long-range) electric passenger car to a Subaru Crosstrek AWD gasoline car in a single-family home.

	Incremental Cost (2022\$) for 2030 MY BEV (300-mile range) w/ home charger
Incremental NPV of vehicle price (loan principal)	\$2,096
Incremental NPV of vehicle price financing (loan interest)	\$347
Incremental cost of home level 2 charging circuit + charging cable	\$880
Incremental NPV of depreciated value after 10 years	(\$164)
Incremental NPV of fuel costs	(\$4,077)
Incremental NPV of maintenance costs	(\$3,509)
Incremental NPV of insurance	\$925
Incremental NPV of taxes & Fees	\$154
Incremental TCO (10 years)	(\$3,347)

The costs of maintenance and scheduled repairs for ZEVs and PHEVs are expected to be lower than that of an equivalent ICEV. The Argonne National Laboratory (ANL) has provided estimates of incremental maintenance costs that are below that of an ICEV based on vehicle technology type and miles driven.¹⁴ For BEVs, the average cost of maintenance and planned repairs is approximately 40% lower than a conventional passenger car (PC), for example, due to fewer oil changes, oil filters, timing belts and other replacement parts (spark plugs and oxygen sensors, for example). The per-mile maintenance savings for this analysis was extracted from the ANL study for passenger vehicles of each drivetrain type and then adjusted using incremental vehicle costs to estimate the per mile savings for the other vehicle types.

Estimated incremental maintenance costs for each vehicle classification and powertrain type, in dollars per mile (values in parentheses are negative values, indicating savings relative to a comparable internal combustion engine vehicle) is shown in Table 5, below:

Table 5: Average dollars per-mile savings of maintenance costs across vehicle types over a ten-year period.

Vehicle Types	Average dollars per mile savings 2026 - 2035
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¹⁴ ANL 2021 Report: <https://publications.anl.gov/anlpubs/2021/05/167399.pdf>

BEV – Passenger Car	(0.040)
BEV – Light Duty Truck 1	(0.039)
BEV – Light Duty Truck 2	(0.053)
BEV – Medium duty vehicle	(0.091)
PHEV – Passenger Car	(0.007)
PHEV – Light Duty Truck 1	(0.009)
PHEV – Light Duty Truck 2	(0.007)
PHEV – Medium Duty Vehicle	(0.007)

While the cost of battery replacement may be incurred, it is important to note that the durability and warranty requirements of the proposed rule ensure that consumers will not have to bear the cost of a battery replacement in advance of the battery’s useful life within the warranty period.

Increasing access to ZEVs and clean mobility in low-income and frontline communities is of utmost importance. The proposed ACC II regulations will reduce exposure to vehicle pollution in communities that are often disproportionately impacted by motor vehicle pollution, such as near-roadway communities, by reducing emissions from ICEVs and accelerating the transition to ZEVs. Further, the proposed ZEV assurance measures will ensure these emissions benefits are long lasting and support the development of a robust used ZEV market. In addition, the ZEV regulation incentivizes automakers to invest in community carshare programs, produce more affordable ZEVs, and ensure that more used ZEVs are available. While the proposed ACC II regulations will advance equity, a whole-of-government approach is needed to maximize access, ensure affordability, and direct benefits to low-income and frontline communities. Thus, other policies and programs beyond ACC II will be needed to ensure these communities benefit from and have direct access to ZEVs.

2.3.1.1 Funding Opportunities to Support the Transition

The above TCO scenarios will likely be further influenced, and additional cost savings realized, by the multiple programs that Vermont has supported, and continues to support, to encourage the transition cleaner transportation options. The Vermont legislature authorized statewide incentive programs for income-qualified Vermonters including 1) an incentive program for the purchase or lease of new plug-in electric vehicles, 2) a high-fuel-efficiency used-vehicle incentive program called MileageSmart, 3) Replace Your Ride, to encourage cleaner alternatives to high-polluting vehicles, and 4) an incentive program for the purchase of an electric bike. Since 2019, more than \$16.7 million has been provided for the Vermont incentive program for new plug-in electric vehicle purchases or leases. Currently, new purchase incentives range from \$1,500 to \$4,000 depending on income level and whether the vehicle is an all-electric or plug-in hybrid model. Additionally, Vermonters purchasing plug-in electric vehicles may be eligible for a federal tax credit of up to \$7,500 and/or offers from electric utilities.

Since 2019, more than \$4 million has been provided for the MileageSmart program administered by Vermont’s Community Action Agencies. MileageSmart provides point-of-sale financial assistance to

income-eligible Vermonters to purchase used electric or fuel-efficient vehicles, including all-electric or plug-in hybrid models.

Replace Your Ride launched in September 2022 and offers up to \$3,000 for income-eligible Vermonters who retire a high-polluting gas vehicle in favor of cleaner transportation options, such as an EV, bike, electric bike, electric motorcycle, shared mobility services like carsharing or vanpooling, or some combination of these. Vouchers can be used in combination with the other incentive programs.

The Electric Bike Incentive Program launched July 21, 2022, but closed shortly afterwards on September 16, 2022, when the \$105,000 authorized in program funding was exhausted. Vermont residents aged 16 or older were eligible on a first-come, first-served basis for up to \$400 towards the purchase of an electric bicycle, with higher incentives for households and individuals with lower incomes.

Since 2014, the State of Vermont has invested over \$3.5 million in public EV charging stations in all 14 counties across the state including 41 direct current fast charging (DCFC) stations and 89 Level 2 charging stations. More recently, Governor Scott and the Legislature have allocated \$10 million in funding to help reduce the cost of installing charging stations in multiunit residential properties, workplaces, and public attractions. This program is building on a \$1 million pilot program to provide residents of multiunit residential properties access to home EV charging. The pilot program funds have been fully obligated and are expected to result in 84 new Level 2 charging ports at 37 different affordable multiunit residential properties across the state, providing access to home charging for over 6,000 Vermont households.

To support the buildout of fast charging that meets EV drivers need to re-charge more quickly when traveling longer distances, the State has set a goal to have a DCFC within 1 mile of every interstate exit, and within 25 miles of the next DCFC on the State highway network. In support of achieving this goal, Governor Scott and the Legislature have allocated \$2 million in FY23; the State will also receive \$21.2 million over the next 5 years from the Federal Highway Administration to build fast charging stations. This network of public DCFC chargers can provide 30-90 miles of range per 10 minutes of charging.

2.3.2 Costs and Benefits to Individuals: ACT/Low NOx HD Omnibus/Phase 2

The proposed ACT regulation will reduce GHG, NOx, and PM2.5 emissions, while the proposed HD Omnibus regulation will reduce NOx and secondary PM2.5 formation since NOx is a precursor to secondary PM2.5 formation. The proposed Phase 2 GHG regulations will require heavy duty trucks and trailers to reduce GHG emissions. Reductions in NOx and PM2.5 emissions result in health benefits for Vermonters, including reduced instances of premature deaths, hospitalizations for cardiovascular and respiratory illnesses, and emergency room visits.

Using U.S. EPA's COBRA screening model, NESCAUM assisted Vermont in calculating the estimated economic value of the health benefits associated with the adoption of the proposed rules. Utilizing the COBRA model is generally consistent with EPA practice for estimating avoided health impacts and monetized benefits. The COBRA model estimates impacts to PM air pollution concentrations, which are translated into health outcomes. Table 6 shows the estimated total cost savings from avoided premature deaths, avoided hospitalizations for cardiovascular and respiratory illnesses, and avoided emergency room visits due to the reductions in criteria pollutant emissions associated with the proposed ACT, HD Omnibus, and Phase 2 GHG regulations for the year 2040 in Vermont, relative to the baseline. Table 7 shows the estimated total avoided costs from avoided premature deaths,

hospitalizations for cardiovascular and respiratory illnesses, and emergency room visits due to the reductions in criteria pollutant emissions associated with the proposed ACT, HD Omnibus, and Phase 2 GHG regulations for 2025 through 2050 in Vermont, relative to the baseline.

Table 6: Annual COBRA-estimated economic values of Vermont adopting ACT/HD Omnibus/Phase 2 Rules, in US dollars for the year 2040. Total costs avoided are due to criteria pollutant emission reductions.

Proposed Regulations	Valuation	Year	Total Costs Avoided
ACT/HD Omnibus/ Phase 2 Rules	\$2018	2040	\$304,000-685,000

Table 7: 2025-2050 Statewide estimated Cumulative Health Impacts from ACT, HD Omnibus, and Phase 2 GHG Rules, in US dollars. Total costs avoided are due to criteria pollutant emission reductions.

Proposed Regulations	Valuation	Years	Total Cumulative Costs Avoided
ACT/HD Omnibus/ Phase 2 Rules	\$2018 (millions)	2025-2050	\$11-24M

Notes on COBRA modeling:

1. COBRA version 4.0.
2. Emissions baseline year, Phase II Source-Receptor (S-R) Matrix and adjustment factors, and incidence and health effect functions for 2023.
3. Vermont population projection for 2025-2050 utilized the 2017 U.S. Census Bureau National Population Projections as a baseline, which was adjusted at the state and county levels using the COBRA population inventory database.
4. Valuation functions were projected for 2025-2050 using a linear model based on the COBRA valuation inventory database.
5. Discount rate of 3%.

The proposed ACT and Phase 2 GHG regulations account for GHG benefits in terms of carbon dioxide (CO₂) emissions avoided. The social cost of carbon (SC-CO₂) is an estimate of the monetized value of long-term impacts (economic, health and environmental) from climate change as a result of a single metric ton increase in CO₂ emissions in a given year.¹⁵ For a discussion of the impacts of climate change, see the Environmental Impact Analysis on page 17. Estimates of the Social Cost of Carbon are calculated in four steps using specialized computer models that: (1) Predict future emissions based on population, economic growth, and other factors, (2) Model future climate responses, such as temperature increase and sea level rise, (3) Assess the economic impact that these climate changes will have on agriculture, health, energy use, and other aspects of the economy, and (4) Convert future damages into their present-day value and add them up to determine total damages.¹⁶

¹⁵ The National Academy of Sciences defines the Social Cost of Carbon as "an estimate, in dollars, of the present discounted value of the future damage caused by a metric ton increase in carbon dioxide (CO₂) emissions into the atmosphere in that year or, equivalently, the benefits of reducing CO₂ emissions by the same amount in that year."

¹⁶ Resources for the Future, Social Cost of Carbon 101. https://www.rff.org/documents/2153/SCC_Explainer.pdf

This analysis utilizes the Vermont Climate Council recommended SC-CO2 values and discount rates, which is a method of placing a present value on costs or benefits that will occur at a future date, identified in the *Initial Vermont Climate Action Plan*.¹⁷ Because the SC-CO2 is highly sensitive to the discount rates applied, the range of discount rates from 1% to 3% is used to illustrate the varying magnitude of possible economic outcomes, however, the Council determined it was reasonable to use the SC-CO2 value developed using the central discount rate of 2% for the Vermont Climate Action Plan. Table 8 shows the estimated avoided social costs based on the GHG emissions reductions benefits from the proposed ACT and Phase 2 GHG standard regulations from 2025 through 2050.

Table 8: 2025-2050 Statewide Estimated Avoided Social Cost of CO₂ from Medium- and Heavy-duty vehicle rules

Year	3% Average Discount Rate		2% Average Discount Rate		1% Average Discount Rate	
	Value (2020\$/metric ton CO ₂)	Cost Avoided	Value (2020\$/metric ton CO ₂)	Cost Avoided	Value (2020\$/metric ton CO ₂)	Cost Avoided
2025	56	\$491,268	129	\$1,131,670	418	\$3,666,962
2026	57	\$903,723	131	\$2,076,977	421	\$6,674,865
2027	59	\$1,353,279	132	\$3,027,676	423	\$9,702,324
2028	60	\$1,801,145	134	\$4,022,558	426	\$12,788,131
2029	61	\$2,263,175	136	\$5,045,768	428	\$15,879,329
2030	62	\$2,739,370	137	\$6,053,124	430	\$18,998,856
2031	63	\$3,629,188	139	\$8,007,256	433	\$24,943,465
2032	64	\$4,545,851	141	\$10,015,078	435	\$30,897,582
2033	65	\$5,489,360	142	\$11,992,141	437	\$36,905,390
2034	66	\$6,459,715	144	\$14,093,923	440	\$43,064,764
2035	67	\$7,456,915	146	\$16,249,396	442	\$49,193,377
2036	69	\$8,800,151	147	\$18,748,147	444	\$56,627,056
2037	70	\$10,064,572	149	\$21,423,160	446	\$64,125,699
2038	71	\$11,361,475	151	\$24,163,137	449	\$71,849,329
2039	72	\$12,690,861	152	\$26,791,818	451	\$79,494,143
2040	73	\$14,052,729	154	\$29,645,483	453	\$87,203,922
2041	74	\$15,262,572	156	\$32,175,151	456	\$94,050,443
2042	75	\$16,499,910	158	\$34,759,811	459	\$100,979,450
2043	77	\$17,998,491	160	\$37,399,461	461	\$107,757,198
2044	78	\$19,304,568	162	\$40,094,103	464	\$114,837,432
2045	79	\$20,638,141	164	\$42,843,737	467	\$122,000,152
2046	80	\$21,761,337	166	\$45,154,773	469	\$127,575,836

¹⁷ Vermont Climate Council, *Initial Vermont Climate Action Plan*, December 2021. <https://climatechange.vermont.gov/sites/climatecouncilsandbox/files/2021-12/Initial%20Climate%20Action%20Plan%20-%20Final%20-%202012-1-21.pdf>

2047	81	\$22,906,081	167	\$47,226,117	471	\$133,194,617
2048	82	\$24,072,374	169	\$49,612,575	472	\$138,562,931
2049	84	\$25,564,555	170	\$51,737,790	474	\$144,257,133
2050	85	\$26,784,720	172	\$54,199,669	476	\$149,994,433
TOTAL		\$304,895,525		\$637,690,498		\$1,845,224,820

The ACT regulation imposes requirements on vehicle manufacturers to produce and sell ZEVs. However, individuals are not required to purchase zero emission trucks under the proposed ACT regulation. If an individual chooses to purchase electric trucks, they will incur costs associated with electric vehicle infrastructure in addition to the vehicle purchase cost. The proposed ACT regulation would reduce overall costs as lower operational and maintenance costs outweigh the higher upfront purchase price and infrastructure costs. The HD Omnibus regulation imposes requirements on vehicle manufacturers to produce and sell vehicles that may have higher upfront costs. These costs are expected to be passed on to Vermont vehicle fleets and individuals who purchase these vehicles, resulting in indirect impacts to those entities and individuals. The Phase 2 GHG regulation imposes requirements on medium- and heavy-duty engines, vehicles, and trailer manufacturers, which results in increased compliance costs that are also expected to be passed on to Vermont vehicle fleets and individuals who purchase these vehicles and trailers. While there are no direct costs to individuals as a result of these regulations, the positive and negative indirect impacts to small businesses, which may impact individuals that own fleets or a single medium or heavy-duty vehicle, are discussed below.

For the ACT rule, individuals may see health benefits due to ZEVs displacing ICE vehicles and providing statewide, regional, and local emission benefits. Individuals are also likely to benefit from cost savings as a result of reduced fuel consumption and fuel costs. Cost savings are also likely due to the enhanced warranty requirements of ACT and the HD Omnibus Rules. These warranty provisions should result in longer useful life of the subject vehicles, and broader coverage of warranty-repairs within the subject vehicle's warranty period.

2.3.3 Costs and benefits to businesses, including small businesses: ACCII

Businesses that will be directly affected by the proposed regulation include light- and medium-duty vehicle manufacturers because they are entities directly regulated and required to comply. Auto manufacturing is currently not occurring in Vermont. ZEV-only manufacturers are likely to directly benefit from the regulation because they do not manufacture ICEV and will be able to over comply and sell surplus credits to other manufacturers.

Businesses that may be indirectly affected, and likely exist in Vermont, are suppliers of Tier 1 components supplied directly to auto manufacturers, electric vehicle service providers, electric utilities, electric charging and hydrogen infrastructure providers.

Suppliers of Tier 1 components would benefit from increased opportunities created by the need to develop, sell, and support technology to decrease emissions from ICEVs. Many of these companies are also changing their business models to include components for vehicle electrification, as demand for conventional vehicle components declines.

Fleet owners are not required to purchase ZEVs under the proposed rule; however, if a fleet owner chooses to add electric vehicles to their fleet, costs relating to EVSE, infrastructure, and other transitional costs will be incurred.

As mentioned above, Governor Scott and the Legislature have allocated \$10 million in funding to help reduce the cost of installing charging stations at workplaces, public attractions, and multiunit residential properties. Additionally, to support the buildout of fast charging that meets EV drivers need to re-charge more quickly when traveling longer distances, the State has set a goal to have a DCFC within 1 mile of every interstate exit, and within 25 miles of the next DCFC on the State highway network. In support of achieving this goal, Governor Scott and the Legislature have allocated \$2 million in FY23; the State will also receive \$21.2 million over the next 5 years from the Federal Highway Administration to build fast charging stations. This network of public DCFC chargers can provide 30-90 miles of range per 10 minutes of charging.

The proposed regulation will increase the total amount of electric vehicle miles traveled in the state, and the charging of those electric vehicles will increase Vermont's overall electric load and Vermont's electric utilities¹⁸ will likely be impacted by this shift. Electric infrastructure needed to charge BEVs and PHEVs represents a significant area of expected increased load for electric utility companies, as traditional areas of growth have slowed due to energy conservation and energy efficiency efforts. Understanding the grid impacts of the additional load expected from electrification of the transportation system is an important consideration. ISO New England, the independent regional grid operator, prepares an annual long-term forecast for electricity demand in each state, including demand for EV charging. The 10-year projections are published in its annual Capacity, Energy, Loads, and Transmission (CELT) Report, and are used in power system planning and reliability studies¹⁹. ISO New England's Regional System Plan, last updated in 2021, summarizes system needs for generation resources and transmission facilities²⁰. Sufficient resources are expected through 2030 (the time horizon of the plan). The plan anticipates new resource development (namely on- and off-shore wind, solar, and battery resources) and identifies transmission system investments needed to improve reliability and reduce congestion. The report accounts for state policy initiatives and increasing electrification of heating and transportation loads.

VELCO, Vermont's transmission system operator, works with the Vermont System Planning Committee to forecast changes in electric load and model the ability of Vermont's grid to accommodate electric demand under various scenarios. The results are published in the Long-Range Transmission Plan (LRTP) updated every three years; the most recent LRTP was published on July 1, 2021 and looks out 20 years²¹. The plan concluded that Vermont's transmission system has sufficient capacity for expected demand through 2030, and that—by managing 75% of EV load to reduce charging during peak periods—significant transmission upgrades would not be needed. This is also true through 2040, even when considering a higher-than-expected rate of electrification of the transportation and heating sectors. Three distribution utilities already offer EV load management programs, and all utilities will be required

¹⁸ Vermont's distribution utilities are fully regulated by the Vermont Public Utilities Commission, and infrastructure costs of electric distribution are fully recoverable in electric rates.

¹⁹ <https://www.iso-ne.com/system-planning/system-plans-studies/celt/>

²⁰ <https://www.iso-ne.com/system-planning/system-plans-studies/rsp>

²¹ <https://www.velco.com/our-work/planning/long-range-plan>

to offer rates for EV management by June 30, 2024 (per Act 55 of 2021). The Department of Public Service estimates that 31% of residential EV charging is currently managed and this percentage is consistently growing.

In addition, each electric distribution utility completes an Integrated Resource Plan to meet the need for electricity in a safe, reliable manner with the lowest possible economic and environmental costs. These plans are also updated every three years and account for recent and projected trends in electric loads and economic activity. Distribution utilities monitor equipment capabilities as load grows and anticipate which substations and circuits will require upgrades. Infrastructure investments do incur costs, but load growth moderates rate impacts by spreading expenses across additional electricity sales. Home EV charging is typically a flexible load that can be scheduled when the grid is less stressed and wholesale electricity costs are below average. Although early in development, some Vermont distribution utilities have begun testing vehicle-to-grid energy storage services that may further reduce ratepayer costs and improve system reliability.

The LRTP also found that many distribution substation transformers may not require upgrades to accommodate electrification load growth. Comprehensive analysis by the distribution utilities of all circuits to determine their load hosting capacity has not yet been conducted, but it is believed that many existing roadside power lines will be sufficient. The capacity and availability pole-top service transformers is a key consideration. Upgrades of these transformers may be necessary for some households that wish to connect electric vehicles, and global supply chain issues currently cause delays in obtaining them. However, protocols are in place and in development to address this issue.

In addition to the electric utilities that will supply additional electricity to power BEVs and PHEVs under the proposed regulation, ZEV infrastructure businesses will benefit as well. This includes companies that manufacturer, install, operate, and maintain EV charging stations and hydrogen dispensing equipment. Electric Vehicle Supply Equipment (EVSE) providers, and hydrogen station operators will all benefit from increased demand for their equipment with home and public fueling stations. The proposed regulation will increase the total amount of electric vehicle miles travelled in the state, which in turn will likely increase utilization of charging and hydrogen stations across the state and lead to increased revenue for these businesses, making the business model for their investment more stable and predictable. This allows investor capital and venture capital funds to be accessed for increased deployment rates of ZEV infrastructure. Increased use of public charging stations may also have benefits to retail businesses operating or close to charging stations. Many charging stations are located in areas with available shopping, food, or other services. Additionally, Vermont businesses that are contracted to install stations will benefit from the rapidly growing network.

The decreasing trend in demand for gasoline has the potential to result in the fewer gasoline stations, if sustained over time, unless they adapt and provide charging and repair services for ZEVs that enable them to continue offering other services to drivers, such as convenience foods, that tend to be their profit centers. Increased employment opportunities in fields related to electric vehicle charging infrastructure and training technicians to service ZEVs is expected.

Typical passenger car rental businesses could see increasing incremental purchase costs for vehicles over the course of the regulation as stringency increases. At the same time, rental firms would benefit from operational savings due to the reduction in repair and maintenance costs. There may also be an

increased cost for electricity depending on whether the rental business or the driver ends up bearing the costs of vehicle charging, though reduced gasoline usage leads to net fuel savings in nearly all cases.

ZEVs inherently have far fewer propulsion-related parts especially mechanical moving parts as electric motors and power electronics dominate the electric drive propulsion system instead of mechanical internal combustion engines and automatic transmissions comprised of mechanical components like valves, springs, and gears. As a result, it is expected that individual ZEVs will likely need fewer propulsion-related repairs than ICEVs. While this will be a benefit to individual vehicle owners, the vehicle repair and maintenance service industry is estimated to see negative impacts, including dealerships that have service departments, as ZEVs become a greater portion of the fleet. This trend would suggest that the number of businesses providing the services may decrease along with the reduced demand. However, the service information provisions of the regulation are expected to increase participation of small independent repair shops in the transition to ZEV technologies because these repair shops will now be guaranteed access to repair information for ZEVs.

Vehicle dealerships wishing to be certified for sales and service of ZEVs may face costs imposed by their manufacturers for training and equipment but there is no requirement that every dealer be qualified to sell such vehicles, and this will end up being a business decision between dealers and manufacturers. As with any other transitional costs, these impacts may be particularly challenging for smaller or more rural dealerships. Dealers may also incur costs associated with installing electric vehicle charging infrastructure.

Although the proposed regulation could increase initial vehicle prices and incremental costs on small fleet owners in the early years of the regulation, the proposed regulation would provide operational savings to small businesses and small fleet owners. The proposed ZEV assurance measures would help owners of small fleets that choose to purchase ZEVs by eliminating or greatly limiting subsequent out-of-pocket costs for vehicle repairs during the time the vehicle is under warranty. In addition, the enhanced useful life and warranty reporting and battery warranty provisions would encourage manufacturers to produce more durable components, resulting in fewer failures and less downtime for the small fleet owner. Small businesses would also benefit from the operational and fuel savings discussed above in 2.3.1. In an example analysis conducted by ANR in consultation with Atlas Public Policy, a cost example (Table 9) for a small Vermont business that purchases a typical full-size light truck for business use is considered and the total cost of ownership analyzed over time. This result shows a TCO savings over 10 years of nearly \$1,500.

Table 9: Total cost of ownership over 10 years for a small business comparing a Ford F-150 Pickup 4WD to a Ford F-150 Lightning 4WD.

	Incremental Cost (2022\$) for 2030 MY BEV (300-mile range) w/ Level 2 charger
Incremental NPV of vehicle price (loan principal)	\$10,319
Incremental NPV of vehicle price financing (loan interest)	\$1,709

Incremental cost of level 2 charging circuit	\$680
Incremental NPV of depreciated value after 10 years	\$5,511
Incremental NPV of fuel costs	(\$16,126)
Incremental NPV of maintenance costs	(\$8,920)
Incremental NPV of insurance	\$4,551
Incremental NPV of taxes & Fees	\$811
Incremental TCO (10 years)	(\$1,464)

2.3.4 Costs and benefits to businesses, including small businesses: ACT/Low NOx HD Omnibus/Phase 2 GHG

2.3.4.1 *Advanced Clean Trucks*

Manufacturers sell trucks to trucking fleets who operate the vehicles and incur costs following the point of sale including taxes, fueling, maintenance, midlife costs, and registration fees. Fleet owners are not required to purchase zero emission trucks under the ACT regulation; however, if a fleet owner chooses to add electric trucks to their fleet, costs relating to EVSE, infrastructure, maintenance bay upgrades, workforce training, and other transitional costs will be incurred.

The proposed ACT Regulation is likely to increase the supply of ZEVs and will provide additional vehicle options for fleets to consider in meeting their needs. Individual businesses that have operations that are well suited for using ZEVs will likely be able to lower their total cost of ownership by taking advantage of the operational cost savings of battery-electric vehicles. In some situations, reduced costs to the overall state's trucking fleet are forecast as the operational cost savings of the ZEVs likely outweigh the potential infrastructure and vehicle prices, which will especially be the case with available purchase incentives. Amortizing the vehicle and infrastructure investments will help with these companies' cash-flow to realize a cost savings over the life of vehicle ownership.

ANR, in consultation with Atlas Public Policy, conducted analyses of two fleet examples using data collected from one municipal fleet and one commercial fleet. The municipal fleet serves an average sized town in central Vermont, and the commercial fleet is a medium-sized landscaping business in northwest Vermont. These analyses utilize data, information, and assumptions provided by the fleet operators and are local to Vermont, where possible. Table 10, below, shows the total incremental cost of ownership over 10 years for the municipal fleet, which consists of six Class-8 plow/dump trucks and one class-3 pick-up truck, comparing MY2030 EVs to ICEVs. Table 11 shows the total incremental cost of ownership over 10 years for a small business fleet consisting of eight Class-7 trucks, five Class-2b pick-up trucks, and two Class-2a pickup trucks, comparing MY2030 EVs to ICEVs. As demonstrated in both analyses, the upfront capital expenses are significantly higher for the BEV fleet. Access to capital or financing will be critical for fleets to take advantage of the overall savings of BEVs. Tables 10 and 11 also show the impact that state and federal incentive programs for medium- and heavy-duty vehicles will have on EV fleet purchases, especially in situations where an entity owns and operates a majority of

heavier vehicles. The incentives incorporated into the cost analyses in Tables 10 and 11 take into account the tax-credit available to cover incremental vehicle costs up to \$40,000 and other likely purchase and EVSE incentives that will be available via the federal Inflation Reduction Act to offset incremental costs. For the 10-year ownership period, the municipal fleet will realize a cost savings of over \$7,000 and the small-business fleet will realize a cost savings of over \$75,000, with purchase incentives.

Table 10: Incremental cost of Vermont municipal fleet example, comparing EVs to ICEVs with purchase and EVSE incentive funding opportunities from the IRA

	Incremental Cost (2022\$) for 2030 fleet w/ 3 DCFC depot chargers			
	Six Class-8 Truck	One Class-3 Pickup	Fleet total	Fleet total w/ purchase incentives
Incremental NPV of vehicle price (loan principal)	\$74,486	\$8,924	\$83,410	\$8,924
Incremental NPV of vehicle price financing (loan interest)	\$12,338	\$1,478	\$13,816	\$1,478
Incremental cost of depot DCFC or L2 charging infrastructure	\$71,400	\$880	\$72,280	\$36,140
Incremental NPV of depreciated value after 10 years	(\$6,818)	(\$817)	(\$7,635)	(\$7,635)
Incremental NPV of fuel costs	(\$36,394)	(\$1,555)	(\$37,948)	(\$37,948)
Incremental NPV of maintenance costs	(\$2,997)	(\$5,702)	(\$8,699)	(\$8,699)
Incremental NPV of insurance	\$0	\$0	\$0	\$0
Incremental NPV of taxes & Fees	\$0	\$713	\$713	\$713
Incremental TCO (10 years)	\$112,015	\$3,922	\$115,937	(\$7,027)

Table 11: Incremental cost of Vermont small business fleet, comparing EVs to ICEVs with purchase and EVSE incentive funding opportunities from the IRA.

	Incremental Cost (2022\$) for 2030 fleet w/ 4 DCFC and 4 L2 depot chargers

	Eight Class-7 Truck	Five Class 2b Pickup	Two Class 2a Pickup	Fleet total	Fleet total w/ incentives
Incremental NPV of vehicle price (loan principal)	\$96,196	\$34,707	\$20,639	\$151,541	\$55,345
Incremental NPV of vehicle price financing (loan interest)	\$15,934	\$5,749	\$3,419	\$25,102	\$9,186
Incremental cost of depot DCFC or L2 charging infrastructure	\$95,200	\$2,640	\$680	\$98,520	\$49,260
Incremental NPV of depreciated value after 10 years	(\$8,806)	(\$3,177)	\$10,376	(\$1,606)	(\$1,606)
Incremental NPV of fuel costs	(\$169,403)	(\$75,661)	(\$30,260)	(\$275,324)	(\$275,324)
Incremental NPV of maintenance costs	(\$42,496)	(\$61,402)	(\$16,652)	(\$120,550)	(\$120,550)
Incremental NPV of insurance	\$0	\$0	\$9,102	\$9,102	\$9,102
Incremental NPV of taxes & Fees	\$30,192	\$6,137	\$1,622	\$37,951	\$37,951
Incremental TCO (10 years)	\$16,817	(\$91,008)	(\$1,074)	(\$75,265)	(\$236,654)

The proposed ACT Regulation will increase the number of ZEVs deployed, which will in turn increase electricity usage. Electricity usage by ZEVs provides an opportunity for a number of benefits to the utilities, their customers, and the overall grid itself. Electric vehicles are capable of shifting load to off-peak periods, stabilizing voltage frequency, and potentially reducing the use of temporary frequency regulation through emergency generators, while also increasing overall demand, creating a more efficient, highly utilized grid with storage potential. Studies have found that light-duty ZEVs provide a benefit to all utility customers as their electricity utilization drives down rates for all other ratepayers; this is likely to occur in the case of heavy-duty charging as well²².

There is no expected direct cost on small businesses, defined as businesses having 3 or fewer medium- and heavy-duty vehicles, under the ACT Regulation. No manufacturers or fleets who are regulated under this rule are considered to be small businesses. Small businesses who operate trucks will not be required to purchase zero-emission trucks but may independently decide to do so. This may enable cost savings for small businesses due to electric trucks' lower cost of operation.

²² M.J. Bradley and Associates, MJB&A Analyzes State-Wide Costs and Benefits of Plug-in Vehicles in Five Northeast and Mid-Atlantic States, 2017. (<https://www.mjbradley.com/reports/mjba-analyzes-state-wide-costs-and-benefits-plug-vehicles-five-northeast-and-mid-atlantic>).

Vehicle dealerships wishing to be certified for sales and service of zero emission vehicles may face costs imposed by their manufacturers for training and equipment but there is no requirement that every dealer be qualified to sell such vehicles, and this will end up being a business decision between dealers and manufacturers. As opposed to the ACCII, the point of compliance for automakers in ACT occurs once the vehicle is “placed in service” meaning that it has been sold and registered in Vermont and operating on Vermont roadways. This difference is significant for dealers, as it will likely result in the automakers offering critical resources, infrastructure and support to dealers of medium- and heavy-duty vehicles to ensure that EVs delivered are sold and placed in service.

2.3.4.1.1 Funding Opportunities to Support the Transition

Vermont has supported, and continues to support, programs that reduce public exposure to harmful diesel emissions, which in turn encourages the transition to cleaner transportation options. Under ANR’s Diesel Emissions Reduction Program, technical assistance in addition to funding from the Volkswagen Environmental Mitigation Trust (VW Trust) and the U.S. EPA Diesel Emissions Reduction Act (DERA) program are provided to fleet owners for projects that reduce diesel emissions including fleet electrification. ANR has allocated approximately \$15 million of Vermont’s VW Trust funds for the replacement or repowering of diesel trucks and buses with all electric models. Currently, VW Trust funds have been awarded to fleets for the electric replacement of a rack truck, school buses, refuse haulers, and bucket trucks. ANR will continue to solicit future project applications periodically for projects that achieve significant emissions reductions until all remaining funds have been obligated.

The U.S. EPA’s Clean School Bus Program was announced earlier this year. Funded by the Bipartisan Infrastructure Law, the Clean School Bus Program will provide \$5 billion over the next five years to replace existing school buses with zero-emission and low-emission models. The first funding opportunity closed this summer, and a second opportunity is expected to be announced by the end of 2022.

Although these vehicle replacement funding opportunities may be used by some businesses and municipalities to help purchase heavy-duty EVs, these specific diesel emission reduction funding opportunities are not solely medium- and heavy-duty EV purchase incentives. ANR recognizes additional resources are needed for future medium- and heavy-duty EV purchase incentives.

The Inflation Reduction Act (IRA) includes a number of provisions that are meant to accelerate the adoption of technologies to transition away from the use of fossil fuels and mitigate and build resiliency to climate change²³. The IRA updates, reauthorizes and creates a number of vehicle tax credits, including those that apply to medium- and heavy-duty vehicles. The IRA also creates a number of funds to be administered by federal agencies that allocate resources directly to state agencies to plan for and implement programs to reduce GHG emissions. The vehicle tax credit provisions of the law, coupled with the funding available to meet states’ unique needs relevant to climate change mitigation, will accelerate the transition to EV technology and make EVs more accessible and affordable for individuals, businesses, and government fleets.

2.3.4.2 HD Omnibus/Phase 2 GHG

Medium- and heavy-duty engine/vehicle manufacturers are the regulated entities under the HD Omnibus Rule. Because these manufacturers are located outside of Vermont, ANR assumes those

²³ https://www.democrats.senate.gov/imo/media/doc/inflation_reduction_act_of_2022.pdf

manufacturers would pass the direct compliance costs onto the Vermont vehicle fleets that purchase the California-certified vehicles and engines that are subject to the HD Omnibus Rule. Typical businesses are defined here to be Vermont fleets with four or more medium- and heavy-duty vehicles (GVWR >10,000 pounds). The actual cost impact on fleets would depend on the number of new California-certified heavy-duty vehicles that fleets would purchase during the lifetime of this cost analysis. A lifetime analysis including initial purchase price increase, lifetime Diesel Exhaust Fluid (DEF) consumption for NOx control, lifetime savings from warranty, net lifetime cost impact, and percent increase in lifetime cost from the assumed purchase price is presented in Figure 1²⁴.

Engine MY	Lifetime Net Cost Per Vehicle	Lifetime Net Cost of 20 Vehicles
2024	\$2,839	\$56,780
2027	\$5,317	\$106,340
2031	\$5,814	\$116,280

Figure 1: Lifetime Cost Analysis of 20 Medium Heavy-Duty Diesel Trucks

Similar to typical fleets, the actual cost impact on smaller businesses and their fleets would depend on the number of new California-certified heavy-duty vehicles that fleets would purchase during the lifetime of this cost analysis. As shown in Figure 1 above, for a small fleet that would buy one new medium heavy-duty diesel (MHDD) vehicle with a 2024, 2027, or 2031 MY engine, the net lifetime vehicle cost due to the HD Omnibus is estimated to be \$2,839, \$5,317, or \$5,814, respectively.

The HD Omnibus Rule impacts new vehicle dealerships by requiring that new on road heavy-duty engines and vehicles for sale in Vermont meet California emissions standards. By aligning Vermont’s requirements with other states in the region (Massachusetts and New York), dealerships will benefit from the ability to continue to trade vehicles with dealers in those states.

2.3.5 Costs and benefits to schools and school districts: ACCII

ACCII does not provide for the direct regulation of schools or school districts. The ACCII regulation imposes requirements on vehicle manufacturers to produce and deliver ZEVs. Schools and school districts are not required to purchase ZEVs under the proposed regulation. To the extent schools or school districts have passenger cars and light duty trucks as part of their school transportation fleet and they choose to purchase ZEVs, these entities should experience the same net benefit as described above when considering the total cost of ownership of a BEV when replacing an ICEV.

2.3.6 Costs and benefits to schools and school districts: ACT/Low NOx HD Omnibus/Phase 2

The ACT regulation imposes requirements on vehicle manufacturers to produce and sell ZEVs. Schools and school districts are not required to purchase ZEVs under the proposed ACT regulation. ACT, the HD Omnibus, and the Phase 2 rules do not provide for the direct regulation of schools and school districts.

²⁴ California Air Resources Board – HD Omnibus Initial Statement of Reasons, at Pg. IX-52.

As most school districts have heavy-duty buses in their fleet, these entities are likely to experience the same cost savings and net lifetime vehicle cost as explained above in the discussion on the impact of these rules on medium- and heavy-duty fleets. Early adoption of school bus electrification has been identified as critical in reduction of children's exposure to criteria pollutants emitted by traditional fossil-fueled school buses. Several state and federal incentive programs for school bus replacement are currently available and are likely to be expanded in the future. Vermont has been a leader in investigating the feasibility of electric school buses in operation in a cold climate and rural setting via our on-going Electric School and Transit Bus Pilot project.

For a discussion of current funding opportunities that may be available to schools to help to offset the upfront costs of transitioning to EVs, see Section 2.3.4.1.1 above.

2.3.7 Costs and benefits to Local and State Agencies

The ACCII regulation imposes requirements on vehicle manufacturers to produce and deliver for sale zero emission passenger cars, light duty trucks and medium-duty passenger cars in Vermont, while the ACT regulation imposes requirements on vehicle manufacturers to produce and sell medium- and heavy-duty ZEVs in Vermont. State agencies are not required to purchase electric vehicles under the proposed regulations. As with individuals and businesses, state agencies choosing to purchase ZEVs will have to plan to pay higher vehicle prices as the proposed standards are phased in. However, as discussed above, the operating costs of vehicles subject to these standards should outweigh the higher vehicle prices, resulting in a net benefit.

The new complying vehicles are also expected to impact revenues from sales, gas, and diesel taxes. Revenues from vehicle sales taxes would be expected to rise as vehicle prices increase. However, assuming fuel tax rates and vehicle miles traveled remain the same, fuel tax revenues would be expected to decline as the proposed ZEV standards are implemented due to increased electric vehicles on the road. With ICE vehicles becoming more fuel efficient over the years, gas tax revenue has already begun to decline without the proposed rules in place. Recognizing the problem with reduced fuel tax revenue, the Vermont Agency of Transportation (VTrans) has already begun researching methods to replace fuel tax revenue. VTrans convened a group of stakeholders, the Road Usage Charge Advisory Committee to help with this effort and their assessment focused on different revenue mechanisms for electric vehicle owners who pay little to no fuel taxes. Their final report, *Vermont Road Usage Charge Study*, dated March 14, 2022, notes that in 2021 the lost fuel tax revenue (\$300,000) was minimal when compared to the total state transportation fund revenues (\$283 million), but will continue to grow, and concludes that a mileage-based road user fee assessed to electric vehicles is feasible to collect displaced fuel tax revenue and VTrans continues to explore this option.

2.3.8 Total economic impact of ACCII and ACT

To determine the total economic impact of the ACCII and ACT regulations in Vermont, ANR compared the above analyses of public health benefits and costs avoided due to reduced emissions of greenhouse gases to the total costs of implementing these regulations in Vermont. A similar analysis was conducted in California for ACT²⁵ and ACCII²⁶. To appropriately scale the cost impact conclusions reached in California to those likely to occur in Vermont, ANR applied a scaling factor that uses vehicle-miles

²⁵ <https://ww3.arb.ca.gov/regact/2019/act2019/30dayattc.pdf>

²⁶ <https://ww2.arb.ca.gov/sites/default/files/barcu/regact/2022/accii/fsorappf.pdf>

traveled (VMT) data and compares the VMT of different vehicle weight classes in California to those in Vermont. In some cases, the use of the scaling factor was not appropriate or applicable, and a more detailed scaling exercise was used depending on the metric being analyzed. For example, California’s motor vehicle registration fees were not comparable to Vermont’s and therefore Vermont’s specific fee schedule, along with modeled vehicle population data, was used to determine the vehicle registration costs associated with the proposal in Vermont. In some instances, additional scaling factors were used to further account for the difference in fuel prices or electricity rates in Vermont.

The costs and benefits of adopting ACCII and ACT²⁷ in Vermont are shown below in Table 12. Total costs, or negative impacts, include the incremental cost of electric vehicles, maintenance bay upgrades, electric vehicle supply equipment, registration fees, workforce transition, midlife vehicle costs, and sales tax. The cost savings include avoided fuel and maintenance costs, savings related to other regulatory compliance, as well as vehicle to grid (V2G) related savings. Benefits include avoided costs of public health impacts from air pollution and the avoided social cost of carbon. When fully accounting for all analyzed costs, savings, and benefits, the adoption of ACCII will provide a net benefit of nearly \$4 billion and the adoption of ACT will provide a net benefit of over \$494 million in Vermont, the aggregate benefits of both regulations will be nearly \$4.5 billion.

Table 12: Total costs and benefits of ACCII and ACT in Vermont

Scenario (2018\$ billion)	Total Costs (negative)	Health benefits	Total cost-savings	Total benefit	Net benefit	Social Cost of Carbon Avoided	Net benefit (including Social Cost of Carbon, 2018\$ billion)
ACCII Vermont costs and benefits 2025-2040	3.574	.004	6.441	6.445	2.871	1.105	\$3.976
ACT Vermont costs and benefits 2025-2040	\$.467	\$.006	\$.317	\$.323	-\$.143	\$.637	\$.494
Total ACCII and ACT Benefits	\$4.04	\$.009	\$6.76	\$6.77	\$2.73	\$1.74	\$4.47

2.3.9 Alternatives to rule as proposed

As discussed above, the only alternative that ANR considered is to not amend Advanced Clean Cars or adopt Advanced Clean Trucks, the Low NOx HD Omnibus, or the Phase 2 Greenhouse Gas rules. Pursuant to Section 177 of the Clean Air Act, Vermont’s adoption of California’s motor vehicle emission standards must be identical to California’s rules. Therefore, if Vermont does not adopt or amend these

²⁷ A total cost analysis of the Low NOx HD Omnibus and Phase 2 GHG components of the proposed rule was unable to be completed with the time and resources available to ANR for this work, and a discussion of the economic impacts to individuals, small businesses, and other entities required to be analyzed pursuant to the APA is included in the Supplemental Information.

rules, this will result in a reversion to the federal motor vehicle emission standards for passenger cars and light-duty trucks, which are less stringent and would represent significant regulatory backsliding. It would also stall or stifle the progress Vermont has made in reducing criteria pollutant emissions and greenhouse gas emissions as a result of implementation of these rules. All of the benefits articulated in this document, including public health benefits shown via the COBRA model results (see Pages 4 and 8), the emission reduction benefits shown in the Environmental Impact Analysis (see Pages 26-27), and the avoided costs associated with climate change shown via the Social Cost of Carbon analysis (see Pages 5 and 11) would potentially be lost if Vermont chose not to adopt the rule amendments proposed. Also, states that do not participate in Advanced Clean Cars are less likely to receive cleaner and electric vehicles from auto manufacturers, so Vermonters would also have reduced access to these types of vehicles.

3 Environmental Impact Statement Supplemental Information

3.1 Impact on Air Quality and Climate Change

3.1.1 Impacts on Air Quality

Vermont's air quality is often considered to be among the best in the nation. However, the air we breathe is not pollutant-free. Motor vehicles, building heating systems and manufacturing all generate air pollution. Our air quality is also affected by emissions that occur outside of the state, from sources such as electricity generating facilities and wildfires. The weather also plays an important role. Brisk winds and fast-moving weather fronts move pollutants out of our area, while stagnant weather systems can cause pollutants to linger and accumulate, particularly in mountain valley areas.

As the seasons change, so do the sources and causes of decreased air quality. Hazy hot summer days combined with increased motor vehicle emissions during "driving season" can result in increased concentrations of ground level ozone and volatile organic compounds contained in fossil fuel. As winter and "heating season" arrives, emissions from furnaces and boilers, in particular those using wood for fuel, increase and can be trapped in valley areas during temperature inversion events. Throughout the year, fuel burning, agriculture and industry release heat-trapping greenhouse gases such as carbon dioxide, methane, nitrous oxide and sulfur hexafluoride into the atmosphere.

Emissions from mobile sources include GHGs; volatile organic compounds (VOCs) and NO_x, which combine to form ground level ozone that triggers asthma attacks, damages lung tissue, and damages forests and crops; fine PM, which causes respiratory and cardiovascular damage, and leads to haze that limits visibility; toxic and carcinogenic compounds such as benzene, aldehydes and butadiene; and carbon monoxide (CO), which interferes with the delivery of oxygen to the body's organs and tissues.

Toxic and carcinogenic air pollutants are of concern because they are known or suspected of causing cancer in humans, and pose a threat even at very low levels. Diseases aggravated by air pollution include chronic sinusitis, bronchitis, asthma, and allergies. Studies show that air pollution poses significant risk of pulmonary problems in developing fetuses, young children, and older individuals, and damages the immune system in healthy adults.

Reductions in greenhouse gas emissions and other criteria and toxic air contaminants listed above are expected to occur from the adoption of the proposed rule and will therefore have a positive impact of air quality and public health in Vermont.

3.1.2 Impacts on Climate Change

The *Initial Vermont Climate Action Plan* released in December 2021 includes a section devoted to understanding climate and climate change in Vermont. Climate change is currently impacting Vermont. In working to implement the GWSA, ANR is modeling the types of changes that are needed globally to mitigate the impacts of climate change. The key messages from the Climate Action Plan include the following:

- Across Vermont, the 11-year period of 2010-2020 was the warmest since records began in 1895, with the warmest winter and summer seasons occurring in the 2000-2020 period.

- Vermont's average annual temperature has increased over 2.5°F from the 1970s [1960s] to 2010s and over 3°F from the end of the last century.
- The rate of warming has increased through the last 120 years and is currently around +0.5°F a decade.
- Warming is having a number of notable effects, such as the lengthening of the growing season, less reliable winter snow cover, and shifting peak energy usage to the summertime.
- Seasonal temperature trends show the winter season warming nearly twice as fast [over 1.5 times faster] as the annual average, increasing over 4°F from the 1960s to the 2010s.
- Other observed seasonal shifts include an expanding warm season causing longer falls and winter to have more false starts, and more temperature fluctuation within seasons.
- Backward or false springs (during which snow and freezing rain can occur in April-June after the normal progression of warming temperatures) continue to be observed, even with the observation that freeze-free seasons are longer.
- As Vermont's climate warms there has been an observable shift in temperature extremes. Heat waves are becoming more likely while cold waves are decreasing. Evidence for this from Burlington shows a steady decline in cold waves peaking around nearly 6 per year in the 1970s to less than 2 per year in the 2010s. Heat waves have generally increased from around 3 to 4 per year in the 1960s/1970s to over 7 per year in the 2010s.
- Since the mid-2000s, a below average number of very cold nights (defined as nighttime temperatures of 0°F or less) have also been observed in winter, with a near to above average annual number of warm nights in the 2000-2020 period.
- As Vermont's climate warms, the overall amount of precipitation is also increasing. Warmer temperatures produce increased evaporation of water vapor from nearby bodies of water, resulting in a greater potential for weather systems to produce higher amounts of precipitation. In general, increases in annual precipitation changes are relatively small, on the order of +0.5" to +1.0" a decade, with the greatest increases in precipitation occurring during the winter season.
- Extreme precipitation (defined as greater than 2" over 24 hours) has also trended above the long-term average since 1995. These trends are reflected in the increases in stormflow between 1950-2006 as well as the increasing magnitudes of the 1% (100-year return interval) storms across timescales from 1 hour to 1 day.
- The Vermont Department of Health has documented the combined influence of warmer winters and longer warm seasons as contributing to both a more hospitable environment for blacklegged ticks, as well as their hosts, white-footed mice. There has been an exponential increase in probable Lyme disease cases between 1990 and 2016, with Vermont and Maine being the states with the highest increases in actual reported case rates since 1991

3.1.3 Cause

The Intergovernmental Panel on Climate Change (IPCC) released "AR6 Climate Change 2021: The Physical Basis"²⁸ as part of the Sixth Assessment Report (AR6) process. This report states that human

²⁸ IPCC, 2021: Climate Change 2021: The Physical Science Basis. Contribution of Working Group I to the Sixth

influence on the climate system is now an established fact. “It is unequivocal that the increase of CO₂, methane (CH₄) and nitrous oxide (N₂O) in the atmosphere over the industrial era is the result of human activities and that human influence is the principal driver of many changes observed across the atmosphere, ocean, cryosphere and biosphere.”

3.1.4 Greenhouse gas emissions from motor vehicles in Vermont

Motor vehicles and other mobile sources in Vermont are the largest source of a number of air pollutants in the state. These pollutants include, but are not limited to, nitrogen oxides (NO_x) and volatile organic compounds (VOCs), which are precursors to ground level ozone formation (smog), carbon monoxide (CO), particulate matter (specifically PM_{2.5}), and greenhouse gases (GHGs). For information on the impacts of criteria pollutant emissions in Vermont, please refer to the discussion above in the Economic Impact Statement Supplemental Information. Impacts of greenhouse gas emissions are also explained above. Greenhouse gas emissions from mobile sources make up approximately 40% of Vermont’s total GHG emissions profile, or 3.43 million metric tons of CO₂ equivalent (CO₂e) in 2018, with light-duty vehicles accounting for over 70% of that total and the heavy-duty fleet contributing approximately 12%²⁹.

Although Vermont is a relatively small state it has one of the highest rates of GHG emissions per capita in the Northeast driven by high per capita vehicle miles traveled³⁰. In order to meet the mandatory GHG reductions set forth in the Vermont Global Warming Solutions Act of 2020 dramatic emissions reductions from the transportation sector, and especially from light and medium duty on-road vehicles, will be required. Reductions from the sector can be achieved through multiple strategies but electrification of the vehicle fleet plays a critical role in reducing GHG emissions due to the general rural nature and non-centralized development patterns in the state.

3.1.5 GHG and Criteria pollutant emission reductions

3.1.5.1 ACCII

To understand the impact these regulations could have on passenger car and light-duty truck emissions in Vermont, Vermont partnered with NESCAUM and the International Council on Clean Transportation (ICCT) who commissioned Sonoma Technology, Inc. (STI) to estimate the cumulative avoided nitrogen oxides (NO_x), fine particulate matter (PM_{2.5}) and carbon dioxide equivalent (CO₂e) emission reductions beginning in 2025 from the Advanced Clean Cars II Rule.

Table 13, below, estimates the cumulative emission reduction benefits of the zero-emission vehicles first sold in Vermont over various time periods. Since the current ACCII proposal requires 100% ZEV sales by 2035, emissions benefits are only modeled until 2040. Additional modeling to project emissions benefits further to 2050 could be conducted in the future.

Assessment Report of the Intergovernmental Panel on Climate Change [Masson-Delmotte, V., P. Zhai, A. Pirani, S.L. Connors, C. Péan, S. Berger, N. Caud, Y. Chen, L. Goldfarb, M.I. Gomis, M. Huang, K. Leitzell, E. Lonnoy, J.B.R. Matthews, T.K. Maycock, T. Waterfield, O. Yelekçi, R. Yu, and B. Zhou (eds.)]. Cambridge University Press. In Press.

²⁹ Vermont DEC, 2021: Vermont Greenhouse Gas Emissions Inventory and Forecast 1990 – 2017:

https://dec.vermont.gov/sites/dec/files/aqc/climate-change/documents/Vermont_Greenhouse_Gas_Emissions_Inventory_Update_1990-2017_Final.pdf

³⁰ Energy Action Network (EAN), 2020: 2019 Annual Progress Report for Vermont: <https://www.eanvt.org/wp-content/uploads/2020/03/EAN-report-2020-final.pdf>

Table 1313: Cumulative Avoided Emissions of GHG, NOx and PM from ACCII Rule

Avoided Passenger car and light-duty truck emissions, 2025-2030			
	NOx (short tons)	PM2.5 (short tons)	CO2e (million metric tonnes)
ACCII	(74)	(7)	(0.69)
Avoided Passenger car and light-duty truck emissions, 2025-2035			
	NOx (short tons)	PM2.5 (short tons)	CO2e (million metric tonnes)
ACCII	(323)	(32)	(3.25)
Avoided Passenger car and light-duty truck emissions, 2025-2040			
	NOx (short tons)	PM2.5 (short tons)	CO2e (million metric tonnes)
ACCII	(811)	(72)	(7.57)

3.1.5.2 ACT/Low NOx HD Omnibus / Phase 2 GHG

To understand the impact these regulations could have on medium- and heavy-duty vehicle emissions in Vermont, Vermont partnered with NESCAUM and the International Council on Clean Transportation (ICCT) who commissioned Sonoma Technology, Inc. (STI) to estimate the cumulative avoided nitrogen oxides (NOx), fine particulate matter (PM2.5) and carbon dioxide equivalent (CO2e) emission reductions beginning in 2025 from Advanced Clean Trucks, the HD Omnibus Rule, and the Phase 2 GHG Rule.

Table 14³¹, below, estimates the emission reduction benefits of the zero-emission vehicles first sold in Vermont, whether or not the vehicle remains registered in Vermont through the end of its life. All sales that comply with ACT requirements are credited to the ACT, regardless of whether those zero-emission vehicles would have been sold without such regulation.

Table 1414: Avoided Emissions of GHG, NOx and PM from ACT, HD Omnibus, and Phase 2 GHG Rules

Avoided Medium- and Heavy-Duty Emissions, 2020-2040			
	NOx (short tons)	PM2.5 (short tons)	CO2e (million metric tonnes)
ACT	(1,820)	(16)	(1.22)
HD Omnibus ³²	(1,710)	-	-
Phase 2 GHG Stds	-	-	(0.22)
Full Harmonization	(3,010)	(16)	(1.41)
Avoided Medium- and Heavy-Duty Emissions, 2020-2050			
	NOx (short tons)	PM2.5 (short tons)	CO2e (million metric tonnes)
ACT	(5,590)	(44)	(3.77)
HD Omnibus	(4,330)	-	-

³¹ The ICCT and STI - Benefits of adopting California medium- and heavy-duty vehicle regulations under Clean Air Act Section 177 (<https://theicct.org/publication/state-level-hdv-emissions-reg-fs-dec21/>)

³² Only NOx emissions benefits were quantified for the Low NOx Omnibus Rule. This is because technologies that reduce NOx (e.g., an improved selective catalytic reduction [SCR] catalyst) are expected to have minimal impact on particulate matter (PM) and greenhouse gas (GHG) emissions. Despite this outcome, the Low NOx Omnibus rule remains a necessary component of the suite of rules because it is legally and substantively complimentary to the compliance and goals of the other rules proposed.

Phase 2 GHG Stds	-	-	(0.41)
Full Harmonization	(8,190)	(44)	(4.07)

3.1.6 Emissions reductions in the context of the requirements of 10 V.S.A. §578

The GWSA requires that Vermont reduce greenhouse gas emissions by 26% by 2025, compared to the 2005 baseline emissions, 40% by 2030, compared to the 1990 baseline, and 80% by 2050, compared to the 1990 baseline. The suite of proposed rules does not take effect until 2026, so emissions reductions from these rules have been evaluated in the context of the 2030 emissions reduction requirement. While the GWSA does not mandate a specific level of emission reductions for the transportation sector alone, it does require that the Climate Council consider each sector’s proportional contributions to GHG emissions in Vermont when making decisions about actions and strategies to adopt in the Climate Action Plan and its amendments. Based on the sector proportionality analysis conducted by the Vermont Climate Council in the *Initial Climate Action Plan*, Vermont would need to reduce its transportation GHG emissions to 2.06 MMTCO_{2e} by 2030. Assuming that transportation emissions from 2021, preliminarily estimated to be 2.93 MMTCO_{2e}, will represent Vermont’s baseline transportation emissions in 2030, Vermont would need to reduce transportation GHG emissions by 0.87 MMTCO_{2e} by 2030 to meet the sector’s proportional reduction target. ANR maintains 2021 emissions data as the 2030 baseline emissions due to a high level of uncertainty in emissions trends following the COVID-19 pandemic and a variety of factors including but not limited to increased auto-manufacturer EV commitments, record fuel prices, manufacturer supply chain issues, and expected increases in VMT. As depicted in Figure 2 below, emissions reductions from the proposed suite of rules are estimated to be 0.30 MMTCO_{2e} in 2030, leaving a “gap” of 0.57 MMTCO_{2e} in the transportation sector for 2030 emissions reductions. Beyond 2030, it is likely that the emissions “gap” will begin to close more quickly as internal combustion technology phase-out accelerates and electric vehicles have a broader application. It is important to note that the anticipated reductions shown here assume that the vehicles that manufacturers are required to deliver to Vermont are all registered and operated (placed in service) in Vermont. Complimentary policies, such as vehicle purchase incentives and EV charging infrastructure deployment, will help ensure that vehicles required to be delivered in Vermont are placed in service in Vermont. Otherwise, the emissions reductions discussed here will not be realized solely via the regulatory requirements of this suite of rules.

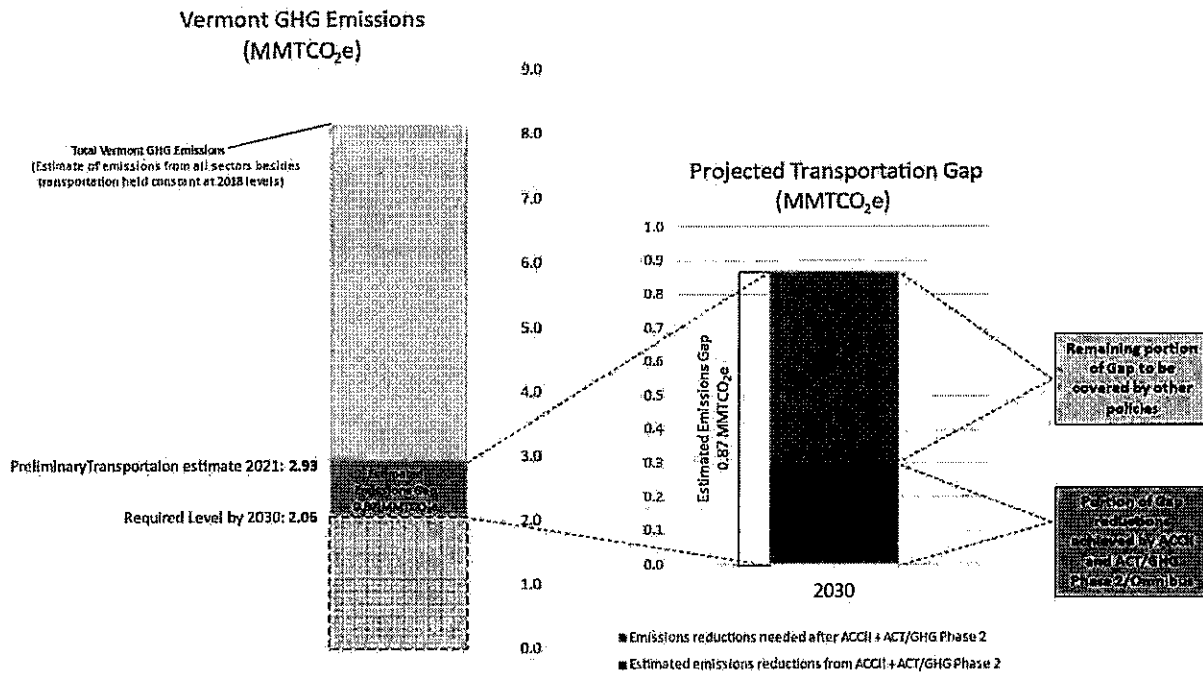


Figure 2: Estimation of ACCII, ACT, and Phase 2 Rules' Impact on Emissions in the Transportation Sector in 2030

3.2 Impacts on water quality

The effects of climate change in Vermont – including increased temperatures and more intense precipitation – can adversely impact water quality.³³ To the extent that reductions of emissions from motor vehicles will help to mitigate the impacts of climate change, water quality in Vermont will generally benefit from actions that help to mitigate climate change. As noted above, in working to implement the GWSA, ANR is modeling the types of changes needed worldwide to mitigate the impacts of climate change.

3.3 Impacts on forest and agricultural land use and recreation

Climate change has impacted the duration and frequency of several natural hazards that impact land use and recreation in Vermont. These include severe storms, winter storms, drought, flooding, wildfires, air pollution, ground-level ozone, temperature extremes, localized winds, and biotic elements (insects and disease)³⁴. While mitigation of air contaminants from motor vehicles, including greenhouse gases will help to mitigate the impacts of climate change, absent multi-national action climate change will continue to impact land use and recreation in Vermont. Given this, and although outside the scope of this rulemaking, implementation of adaptation and resilience strategies is a critical component of responding to climate change in Vermont.

³³ Initial Vermont Climate Action Plan, 2021, Page 29.

³⁴ Initial Vermont Climate Action Plan, 2021, Page 18.

3.4 Other Impacts

3.4.1 Life-cycle emissions

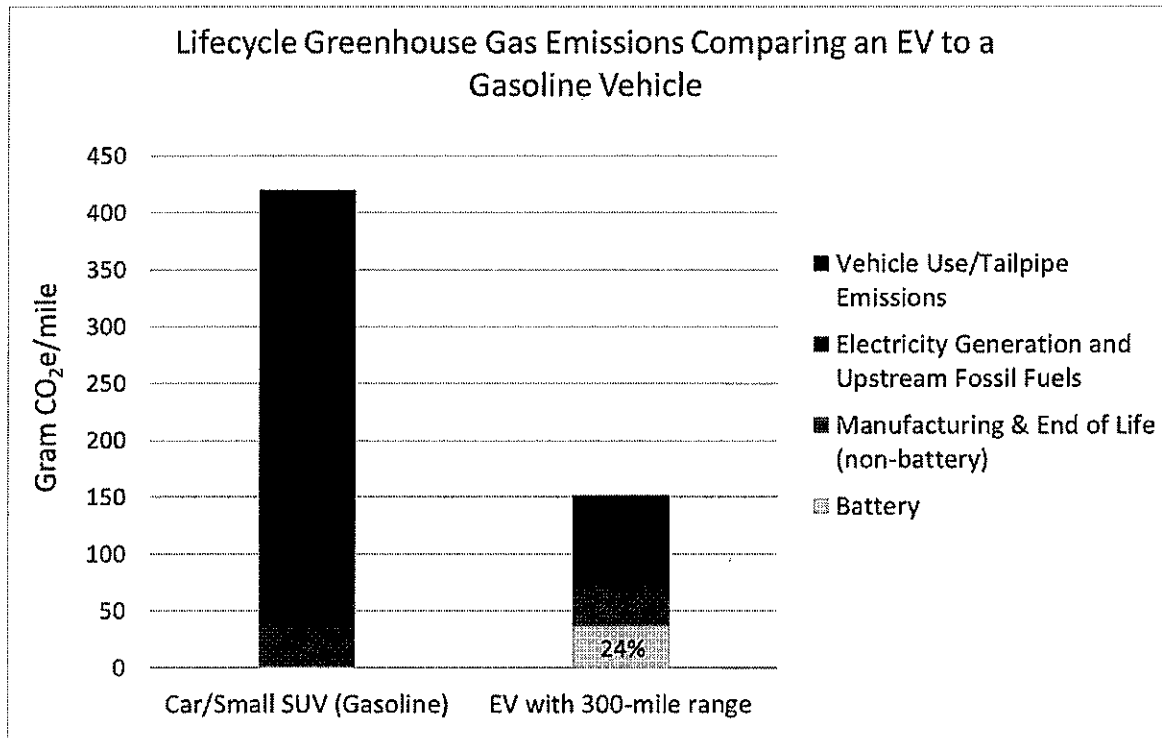


Figure 3: Life-cycle emissions of an EV compared to a small gasoline SUV

When comparing the emissions benefits of vehicle electrification, considering emissions from the entire lifecycle of the vehicle, which include upstream and end-of-life emissions, is important to make a fair assessment of the transition. The comparison shown above includes greenhouse gas emissions associated with the production of the battery, manufacturing of the vehicle, upstream emissions from the generation of electricity to charge the EV and from the extraction and processing of the gasoline, emissions from driving the vehicle, and vehicle end-of-life emissions. Greenhouse gas emissions from the production of the EV battery are important, and the emissions from the generation of the electricity to power the EV are certainly not zero, but they are relatively small when compared to the emissions associated with the gasoline vehicle tailpipe emissions. It should be noted that this comparison is an example using a specific set of vehicles, and that a different EV and a different gasoline vehicle could produce slightly different results, however, this comparison is a fairly representative, and the lifetime greenhouse gas emissions of the EV are generally found to be less than half of those from the gasoline vehicle. It is also true that with expected increases in renewable and low-carbon electricity usage in Vermont, and with the incredibly large investments currently happening in battery technologies, that lifetime emissions from EVs are likely to continue to decline.

3.4.2 Semi-Precious Metal Availability, Mining Impacts, and Battery Recycling

Electrification of the on-road vehicle fleet will likely result in increased demand for lithium, among other semiprecious metals, such that global supply may not be capable of meeting this demand. There are also

likely potential adverse environmental effects from increased mining activity of lithium and other semi-precious metals. Vermont cannot, without speculating, predict the location of these impacts or account for the regulatory environment that may be capable of reducing impacts from these activities. For instance, mining activities that occur overseas in countries that may have fewer regulations in place to mitigate environmental impacts are beyond Vermont's authority to mitigate or regulate. Nevertheless, these potential impacts are identified and discussed here.

The Agency recognizes that its rules and regulations related to the use of zero-emission technology may induce additional new demand for various metals including lithium, graphite, cobalt, nickel, copper, manganese, chromium, zinc, and aluminum. Other federal and international activities³⁵ and commitments are already, and will in the future, impact this demand. It is also important to note that ICEVs require aluminum alloys, magnesium, iron, and steel, which are all metals that already require extensive mining with similar physical impacts to the environment, including loss of habitat, agricultural resources, and forests; water, air, and noise pollution; and erosion.

In response to the industry's electrification commitments and potential obligations, the recycling of lithium-ion batteries is increasing to ensure that minerals are recovered and reused instead of discarded. Policy recommendations aimed at ensuring that as close to 100 percent as possible of lithium-ion vehicle batteries are reused or recycled at end-of-life in a safe and cost-effective manner have also been submitted to the California Legislature by the Lithium-Ion Car Battery Recycling Advisory Group. Additionally, new sources of lithium, among other minerals, have been identified internationally and domestically. Industry is also rapidly moving to batteries with different chemistries or formats to address concerns with mineral supply chain issues or human rights concerns. Moreover, as a component of the proposed rule, automakers will be required to produce ZEV batteries that provide a label to enable second use and recycling processes to conserve semi-precious metals used in the manufacturing process of ZEV batteries. The proposed Advanced Clean Cars II regulation includes durability requirements for batteries that lead to reduced battery degradation and therefore less battery replacements. This has a benefit of reducing battery manufacturing impacts of facility emissions and sourcing of raw minerals, as well as slowing down the need for battery recycling and reuse activities.

³⁵ The federal government recently enacted legislation providing significant support for ZEVs. The Inflation Reduction Act of 2022 provides significant tax credits for new and used ZEVs and electric vehicle charging infrastructure. It provides an advanced manufacturing tax credit for production of critical minerals used in ZEV batteries, appropriates \$500 million for "enhanced use" under the Defense Production Act to incentivize critical mineral production. It authorizes the Department of Energy to commit up to an additional \$40 billion in loan guarantees (on top of an existing program of \$24 billion) for innovative technologies - which includes projects that avoid GHGs and other air pollutants or that employ new or improved technologies. Various international efforts are also underway to electrify the mobile-source sector pursuant to commitments made in the European Union, 30 United Nations (UN) Paris Accord, Kyoto Protocol, and by members of the Under2 Coalition, among others.

4 Scientific Information Statement Supplemental Information

4.1 List of material incorporated by reference (IBR)

Proposed Rule Record, available at: <https://ww2.arb.ca.gov/rulemaking/2022/advanced-clean-cars-ii>

Title 13 California Code of Regulations available at:

<https://govt.westlaw.com/calregs/Index?transitionType=Default&contextData=%28sc.Default%29>

Title 17 California Code of Regulations available at:

<https://govt.westlaw.com/calregs/Index?transitionType=Default&contextData=%28sc.Default%29>

4.2 Summary of record and documentation developed by CARB

4.2.1 Final Statements of Reason and Standardized Regulatory Impact Assessments

Advanced Clean Cars II, available at:

<https://ww2.arb.ca.gov/sites/default/files/barcu/regact/2022/accii/fsor.pdf>

Advanced Clean Trucks, available at: <https://ww3.arb.ca.gov/regact/2019/act2019/fsor.pdf>

Low NOx HD Omnibus, available at:

<https://ww2.arb.ca.gov/sites/default/files/barcu/regact/2020/hdomnibuslownox/fsoraddendum.pdf>

Phase 2 GHG Rules, available at: <https://www.arb.ca.gov/regact/2018/phase2/fsorp2addendum.pdf>

4.3 Other materials cited in Supporting Documents

The ICCT and STI - Benefits of adopting California medium- and heavy-duty vehicle regulations under Clean Air Act Section 177, December 2021, available at <https://theicct.org/publication/state-level-hdv-emissions-reg-fs-dec21/>

The ICCT and STI – Benefits of adopting California Advanced Clean Cars II regulations in Vermont, October 2022, available upon request from the Agency of Natural Resources

Atlas Public Policy – Analysis and Assumptions for ACCII and ACT Total Cost of Ownership in Vermont, October 2022, available upon request from the Agency of Natural Resources

VERMONT GENERAL ASSEMBLY

The Vermont Statutes Online

Title 10 : Conservation And Development

Chapter 023 : Air Pollution Control

(Cite as: 10 V.S.A. § 554)

§ 554. Powers

In addition to any other powers conferred on him or her by law, the Secretary shall have power to:

(1) Appoint and employ personnel and consultants as may be necessary for the administration of this chapter.

(2) Adopt, amend, and repeal rules, implementing the provisions of this chapter.

(3) Hold hearings related to any aspect of or matter in the administration of this chapter, and in connection therewith, subpoena witnesses and the production of evidence.

(4) Issue orders as may be necessary to effectuate the purposes of this chapter and enforce the same by all appropriate administrative and judicial proceedings.

(5) Prepare and develop a comprehensive plan or plans for the prevention, abatement, and control of air pollution in this State.

(6) [Repealed.]

(7) Encourage local units of government to handle air pollution problems within their respective jurisdiction, and by compact on a cooperative basis, and to provide technical and consultative assistance therefor.

(8) Encourage and conduct studies, investigations, and research relating to air contamination and air pollution and their causes, effects, prevention, abatement, and control.

(9) Determine by appropriate means the degree of air contamination and air pollution in the State and the several parts thereof.

(10) Make a continuing study of the effects of the emission of air contaminants from motor vehicles on the quality of the outdoor atmosphere of this State and the several parts thereof, and make recommendations to appropriate public and private bodies with respect thereto.

(11) Establish ambient air quality standards for the State as a whole or for any part thereof, based on nationally recognized criteria applicable to the State of Vermont.

(12) Collect and disseminate information and conduct educational and training programs relating to air contamination and air pollution.

(13) Advise, consult, contract, and cooperate with other agencies of the State, local governments, industries, other states, interstate or interlocal agencies, and the federal government, and with interested persons or groups.

(14) Consult, upon request, with any person proposing to construct, install, or otherwise acquire an air contaminant source or device or system for the control thereof, concerning the efficacy of the device or system, or the air pollution problem that may be related to the source, device or system. Nothing in any consultation shall be construed to relieve a person from compliance with this chapter, rules in force pursuant thereto, or any other provision of law.

(15) Accept, receive, and administer grants or other funds or gifts from public and private agencies, including the federal government, for the purpose of carrying out any of the functions of this chapter. The funds received by the Secretary pursuant to this section shall be deposited in the State Treasury to the account of the Secretary.

(16) Have access to records relating to emissions that cause or contribute to air contamination. (Added 1967, No. 310 (Adj. Sess.), § 4; amended 1971, No. 212 (Adj. Sess.), § 3; 1989, No. 98, § 4(b).)

VERMONT **GENERAL ASSEMBLY**

The Vermont Statutes Online

Title 10 : Conservation And Development

Chapter 023 : Air Pollution Control

(Cite as: 10 V.S.A. § 558)

§ 558. Emission control requirements

The Secretary may establish such emission control requirements, by rule, as in his or her judgment may be necessary to prevent, abate, or control air pollution. The requirements may be for the State as a whole or may vary from area to area, as may be appropriate to facilitate accomplishment of the purposes of this chapter, and in order to take necessary or desirable account of varying local conditions. (Added 1967, No. 310 (Adj. Sess.), § 8; amended 1971, No. 212 (Adj. Sess.), § 3.)

VERMONT **GENERAL ASSEMBLY**

The Vermont Statutes Online

Title 10 : Conservation And Development

Chapter 023 : Air Pollution Control

(Cite as: 10 V.S.A. § 567)

§ 567. Motor vehicle pollution

(a) The Secretary in conjunction with the Department of Motor Vehicles may provide rules for the control of emissions from motor vehicles. Such rules may prescribe requirements for the installation and use of equipment designed to reduce or eliminate emissions and for the proper maintenance of the equipment and the vehicles. Rules pursuant to this section shall be consistent with provisions of federal law, if any, relating to control of emissions from the vehicles concerned and shall not require, as a condition precedent to the initial sale of a vehicle or vehicular equipment, the inspection, certification, or other approval of any feature or equipment designed for the control of emissions from motor vehicles, if the feature or equipment has been certified, approved, or otherwise authorized pursuant to federal law.

(b) Except as permitted or authorized by law, no person shall fail to maintain in good working order or remove, dismantle, or otherwise cause to be inoperative any equipment or feature constituting an operational element of the air pollution control system or mechanism of a motor vehicle and required by rules pursuant to this chapter to be maintained in or on the vehicle. Any failure to maintain in good working order or removal, dismantling, or causing of inoperability shall subject the owner or operator to suspension or cancellation of the registration for the vehicle by the Department of Motor Vehicles. The vehicle shall not thereafter be eligible for registration until all parts and equipment constituting operational elements of the motor vehicle have been restored, replaced, or repaired and are in good working order.

(c) The Secretary shall consult with the Department of Motor Vehicles and furnish it with technical information, including testing techniques, standards, and instructions for emission control features and equipment.

(d) When rules have been issued requiring the maintenance of features or equipment in or on motor vehicles for the purpose of controlling emissions therefrom, no motor vehicle shall be issued an inspection sticker unless all the required features or equipment have been inspected in accordance with the standards, testing techniques, and instructions furnished pursuant to subsection (b) hereof and has been found to meet those standards.

(e) The remedies and penalties provided here apply to violations of this section and

provisions of section 568 of this title shall not apply.

(f) As used in this section, "motor vehicle" shall have the same meaning as defined in 23 V.S.A. § 4. (Added 1967, No. 310 (Adj. Sess.), § 16; amended 1971, No. 212 (Adj. Sess.), § 3.)

VERMONT GENERAL ASSEMBLY

The Vermont Statutes Online

Title 10 : Conservation And Development

Chapter 024 : Vermont Climate Council And Climate Action Plan

(Cite as: 10 V.S.A. § 593)

§ 593. Rules

(a) The Secretary of Natural Resources shall adopt rules pursuant to 3 V.S.A. chapter 25 consistent with the Vermont Climate Action Plan (Plan). In adopting rules pursuant to this section the Secretary shall:

(1) Ensure that the rules are consistent with the specific initiatives, programs, and strategies set forth in the Plan and updates to the Plan; follow the Vermont Climate Council's guidance provided pursuant to subdivision 591(b)(4) of this chapter; and further the objectives pursuant to subsection 592(d) of this chapter.

(2) Develop a detailed record containing facts; data; and legal, scientific, and technical information sufficient to establish a reasonable basis to believe that the rules shall achieve the State's greenhouse gas emissions reductions requirements pursuant to section 578 of this title. This detailed record shall be included with the rule and filed with the Secretary of State pursuant to 3 V.S.A. § 838.

(b) On or before December 1, 2022, the Secretary shall adopt and implement rules consistent with the specific initiatives, programs, and strategies set forth in the Plan and achieve the 2025 greenhouse gas emissions reduction requirement pursuant to section 578 of this title.

(c) The Secretary shall conduct public hearings across the State concerning the proposed rules. The Secretary shall conduct a portion of these hearings in areas and communities that have the most significant exposure to the impacts of climate change, including disadvantaged, low-income, and rural communities and areas.

(d) The Secretary shall, on or before July 1, 2024, review and, if necessary, update the rules required by subsection (b) of this section in order to ensure that the 2025 greenhouse gas emissions reduction requirement pursuant to section 578 of this title is achieved. In performing this review and update, the Secretary shall observe the requirements of subsection (c) of this section.

(e) On or before July 1, 2026, the Secretary shall adopt and implement rules consistent with the specific initiatives, programs, and strategies set forth in the Plan and updates to the Plan and achieve the 2030 greenhouse gas emissions reduction requirement pursuant to section 578 of this title. The Secretary shall observe the

requirements of subsection (c) of this section.

(f) The Secretary shall, at his or her discretion, but not less frequently than once every two years between 2026 and 2030, review and, if necessary, update the rules required by subsection (e) of this section in order to ensure that the 2030 greenhouse gas emissions reduction requirement pursuant to section 578 of this title is achieved. In performing this review and update, the Secretary shall observe the requirements of subsection (c) of this section.

(g) On or before July 1, 2040, the Secretary shall adopt and implement rules consistent with the specific initiatives, programs, and strategies set forth in the Plan and updates to the Plan and achieve the 2050 greenhouse gas emissions reduction requirement pursuant to section 578 of this title.

(h) The Secretary shall, at his or her discretion, but not less frequently than once every two years between 2040 and 2050, review and, if necessary, update the rules required by subsection (g) of this section in order to ensure that the 2050 greenhouse gas emissions reduction requirement pursuant to section 578 of this title is achieved. In performing this review and update, the Secretary shall observe the requirements of subsection (c) of this section.

(i) The Secretary may establish alternative reduction mechanisms to be used by sources of greenhouse gas emissions, if necessary, to achieve net zero emissions after 2050.

(1) The use of alternative reduction mechanisms shall account for not more than 20 percent of statewide greenhouse gas emissions estimated as a percentage of 1990 emissions. The use of a mechanism must offset a quantity of greenhouse gas emissions equal to or greater than the amount of greenhouse gasses emitted.

(2) The Secretary shall verify that any greenhouse gas emissions offset projects authorized as alternative reduction mechanisms represent equivalent emissions reductions or carbon sequestration that are real, additional, verifiable, enforceable, and permanent.

(j) If the Council fails to adopt the Plan or update the Plan as required by section 592 of this chapter, the Secretary shall adopt and implement rules pursuant to 3 V.S.A. chapter 25 to achieve the greenhouse gas emissions reductions requirements pursuant to section 578 of this title.

(k) Nothing in this section shall be construed to limit the existing authority of a State agency, department, or entity to regulate greenhouse gas emissions or establish strategies or adopt rules to mitigate climate risk and build resilience to climate change.

(l) The General Assembly may repeal, revise, or modify any rule or amendment to any rule, and its action shall not be abridged, enlarged, or modified by subsequent rule. (Added 2019, No. 153 (Adj. Sess.), § 4, eff. Sept. 22, 2020.)



Proposed Rules Postings

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Deadline For Public Comment

Deadline: Sep 30, 2022

The deadline for public comment has expired. Contact the agency or primary contact person listed below for assistance.

Rule Details

Rule Number:	22P021
Title:	Vermont Low Emission Vehicle and Zero Emission Vehicle Rules.
Type:	Standard
Status:	Proposed
Agency:	Department of Environmental Conservation, Agency of Natural Resources
Legal Authority:	10 V.S.A. §§ 554, 558, and 567.
Summary:	ANR proposes to amend its existing Low and Zero Emission Vehicle Rules by adopting, via incorporation by reference, California's Advanced Clean Cars II (which amends Advanced Clean Cars

I, currently in effect), Advanced Clean Trucks, Low NOx Heavy-Duty Omnibus, and the Phase 2 Greenhouse Gas Rule. The Low Emission Vehicle Rules set standards for emissions of criteria air pollutants and greenhouse gases from passenger cars, light-duty trucks, and medium- and heavy-duty vehicles and engines that are delivered for sale or placed in service in Vermont. The Zero Emission Vehicle Rules set standards that ultimately require auto manufacturers to deliver more electric vehicles to Vermont. Lower emitting and electric vehicle technology will save Vermonters money, improve public health and air quality, and help to mitigate the impacts of climate change. See attached Regulation Summary Document for more information on the requirements of the rules.

Persons Affected:

Individuals, businesses (including fleet owners), automobile manufacturers and dealers, the Agencies of Transportation (including the Department of Motor Vehicles), Agriculture Food and Markets, and Commerce and Community Development, the Departments of Public Service, Buildings and General Services, and Health, the Public Utilities Commission, and local governments.

Economic Impact:

The analysis of economic impact is addressed in direct and indirect costs and benefits. Auto manufacturers will be directly impacted, while most other Vermonters and Vermont entities will be indirectly impacted by the overall shift to vehicle electrification over time. The proposed rules would provide a positive economic impact to individuals and entities in Vermont in the form of cost savings related to vehicle ownership, monetized public health benefits, and avoided costs associated with the long term impacts of climate change on the economy, the environment and individuals. For example, the Low NOx Heavy-Duty Omnibus rule will result in increased upfront cost of vehicle ownership, however consumer benefits, such as lengthened vehicle useful life and enhanced warranty requirements, should result in savings over the period of vehicle ownership. See supplemental Technical Support Document for further information.

Posting date:

Aug 17,2022

Hearing Information

Information for Hearing # 1

Hearing date: 09-21-2022 5:00 PM [ADD TO YOUR CALENDAR](#)

Location: Aldrich Public Library, Milne Room

Address: 6 Washington Street

City: Barre

State: VT

Zip: 05641

Hearing Notes:

Information for Hearing # 2

Hearing date: 09-23-2022 12:00 PM [ADD TO YOUR CALENDAR](#)

Location: Virtual Hearing: climatechange.vermont.gov
Zoom link: <https://us06web.zoom.us/j/84646719364?pwd=ejhqU2YyeGhnR2pqM1d4VnJJVG90UT09>, Meeting ID: 846 4671 9364, Passcode: 313515, Dial-in Option: 1 (309) 205 3325.

Address: eGhnR2pqM1d4VnJJVG90UT09, Meeting ID: 846 4671 9364, Passcode: 313515, Dial-in Option: 1 (309) 205 3325.

City: online

State: VT

Zip: n/a

Hearing Notes: September 23, 2022 12:00 pm a remote hearing will be available online at climatechange.vermont.gov; Zoom link: <https://us06web.zoom.us/j/84646719364?pwd=ejhqU2YyeGhnR2pqM1d4VnJJVG90UT09>, Meeting ID: 846 4671 9364, Passcode: 313515, Dial-in Option: 1 (309) 205 3325.

Contact Information

Information for Primary Contact

PRIMARY CONTACT PERSON - A PERSON WHO IS ABLE TO ANSWER QUESTIONS ABOUT THE CONTENT OF THE RULE.

Level: Primary

Name: Megan O'Toole

Agency: Agency of Natural Resources

Address: 1 National Life Drive, Davis 4

City: Montpelier

State: VT

Zip: 05620

Telephone: 802-249-9882

Fax:

Email: megan.otoole@vermont.gov

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Keywords:

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greenhouse gas emissions
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Global Warming Solutions Act

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	The Caledonian Record Julie Poutré (adv@caledonian-record.com)	Tel: 748-8121 FAX: 748-1613
	Times Argus / Rutland Herald Melody Hudson (classified.ads@rutlandherald.com) Elizabeth Marrier (elizabeth.marrier@rutlandherald.com)	Tel: 802-747-6121 ext 2238 FAX: 802-776-5600
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	Herald of Randolph (ads@ourherald.com)	Tel: 728-3232 FAX: 728-9275 Attn: Brandi Comette
	Newport Daily Express (jlafoe@newportvermontdailyexpress.com)	Tel: 334-6568 FAX: 334-6891 Attn: Jon Lafoe
	News & Citizen (mike@stowereporter.com) Irene Nuzzo (irene@newsandcitizen.com and ads@stowereporter.com removed from distribution list per Lisa Stearns.	Tel: 888-2212 FAX: 888-2173 Attn: Bryan
	St. Albans Messenger Ben Letourneau (ben.letourneau@samessenger.com)	Tel: 524-9771 ext. 117 FAX: 527-1948 Attn: Ben Letourneau
	The Islander (islander@vermontislander.com)	Tel: 802-372-5600 FAX: 802-372-3025
	Vermont Lawyer (hunter.press.vermont@gmail.com)	Attn: Will Hunter

FROM: APA Coordinator, VSARA

Date of Fax: August 17, 2022

RE: The "Proposed State Rules " ad copy to run on

August 25, 2022

PAGES INCLUDING THIS COVER MEMO:

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***NOTE* 8-pt font in body. 12-pt font max. for headings - single space body. Please include dashed lines where they appear in ad copy. Otherwise minimize the use of white space. Exceptions require written approval.**

If you have questions, or if the printing schedule of your paper is disrupted by holiday etc. please contact VSARA at 802-828-3700, or E-Mail sos.statutoryfilings@vermont.gov, Thanks.

PROPOSED STATE RULES

By law, public notice of proposed rules must be given by publication in newspapers of record. The purpose of these notices is to give the public a chance to respond to the proposals. The public notices for administrative rules are now also available online at <https://secure.vermont.gov/SOS/rules/>. The law requires an agency to hold a public hearing on a proposed rule, if requested to do so in writing by 25 persons or an association having at least 25 members.

To make special arrangements for individuals with disabilities or special needs please call or write the contact person listed below as soon as possible.

To obtain further information concerning any scheduled hearing(s), obtain copies of proposed rule(s) or submit comments regarding proposed rule(s), please call or write the contact person listed below. You may also submit comments in writing to the Legislative Committee on Administrative Rules, State House, Montpelier, Vermont 05602 (802-828-2231).

Amendments to the Vermont Air Pollution Control Regulations - Wood Heater rules.

Vermont Proposed Rule: 22P020

AGENCY: Agency of Natural Resources, Environmental Conservation

CONCISE SUMMARY: This amendment creates a new framework for controlling emissions from wood heaters of all sizes in Vermont. It amends the threshold for EPA certification of smaller sized wood heaters, adds a new size category for mid-sized wood heaters, and lowers the size threshold for wood heating installations that need to obtain an air pollution control permit to be constructed and operated in Vermont. Per Act 50, ANR has also allowed for an alternative compliance mechanism for non-residential medium sized wood heaters to allow manufacturers and installers more flexibility in complying with the rule. This rulemaking also includes an administrative amendment to remove Subchapter XI of the APCR, as this rule will be repromulgated in a concurrent rulemaking as Chapter 40 in the DEC rules (see separate filing).

FOR FURTHER INFORMATION, CONTACT: Rachel Stevens, Agency of Natural Resources, Department of Environmental Conservation, 1 National Life Drive, Davis 2, Montpelier, VT 05620 Tel: 802-636-7236 Email: rachel.stevens@vermont.gov URL: <https://dec.vermont.gov/air-quality/laws>.

FOR COPIES: John Wakefield, Agency of Natural Resources, Department of Environmental Conservation, 1 National Life Drive, Davis 4, Montpelier, VT 05620 Tel: 802-279-5674 Email: john.wakefield@vermont.gov.

Vermont Low Emission Vehicle and Zero Emission Vehicle Rules.

Vermont Proposed Rule: 22P021

AGENCY: Agency of Natural Resources, Environmental Conservation

CONCISE SUMMARY: ANR proposes to amend its existing Low and Zero Emission Vehicle Rules by adopting, via incorporation by reference, California's Advanced Clean Cars II (which amends Advanced Clean Cars I, currently in effect), Advanced Clean Trucks, Low NOx Heavy-Duty Omnibus, and the Phase 2 Greenhouse Gas Rule. The Low Emission Vehicle Rules set standards for emissions of criteria air pollutants and greenhouse gases from passenger cars, light-duty trucks, and medium- and heavy-duty vehicles and engines that are delivered for sale or placed in service in Vermont. The Zero Emission Vehicle Rules set standards that

ultimately require auto manufacturers to deliver more electric vehicles to Vermont. Lower emitting and electric vehicle technology will save Vermonters money, improve public health and air quality, and help to mitigate the impacts of climate change. See attached Regulation Summary Document for more information on the requirements of the rules.

FOR FURTHER INFORMATION, CONTACT: Megan O'Toole, Agency of Natural Resources, 1 National Life Drive Davis 4 Montpelier, VT 05620 Tel: 802-249-9882 Email: megan.otoole@vermont.gov URL: <https://dec.vermont.gov/air-quality/laws>.

FOR COPIES: Deirdra Ritzer, Agency of Natural Resources, 1 National Life Drive Davis 4 Montpelier, VT 05620 Tel: 802-233-8052 Email: deirdra.ritzer@vermont.gov.
