Exploring Cap-and-Invest: A Pollution Reduction Strategy

Presented to the Vermont House and Senate Transportation Committees

Thursday, February 20

9:00 a.m.

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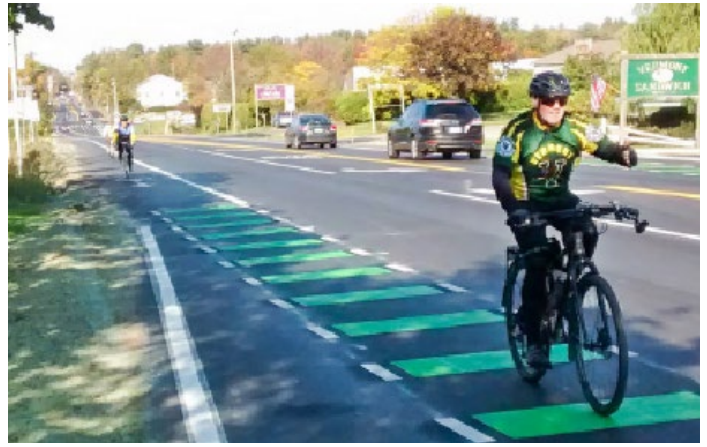
Agenda

- Welcome
- What led Vermont to do this study?
- What is a cap-and-invest program?
- Climate policy study findings
  - How can a cap-and-invest help Vermont meet our climate goals?
  - What are the potential benefits and impacts to Vermonters?
- Discussion/Q&A



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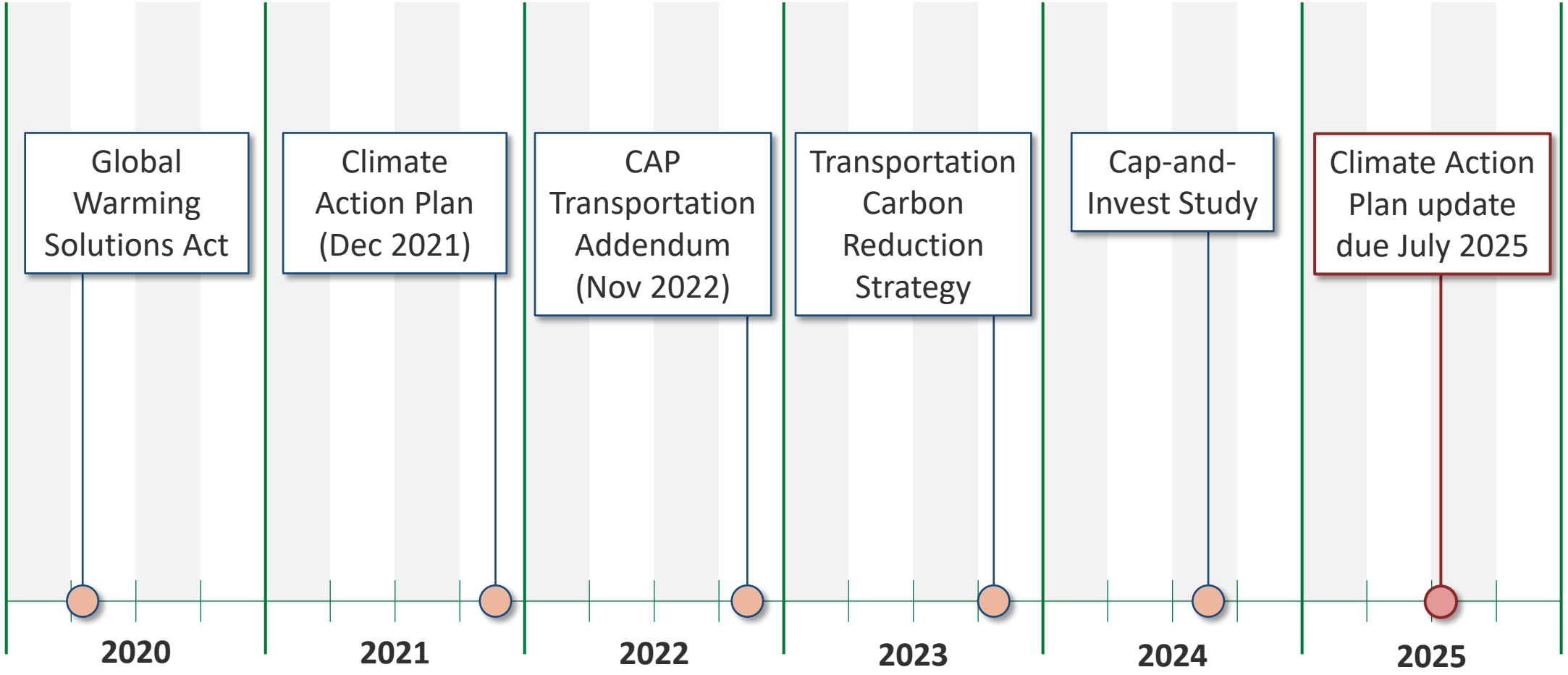
Vermont climate action planning



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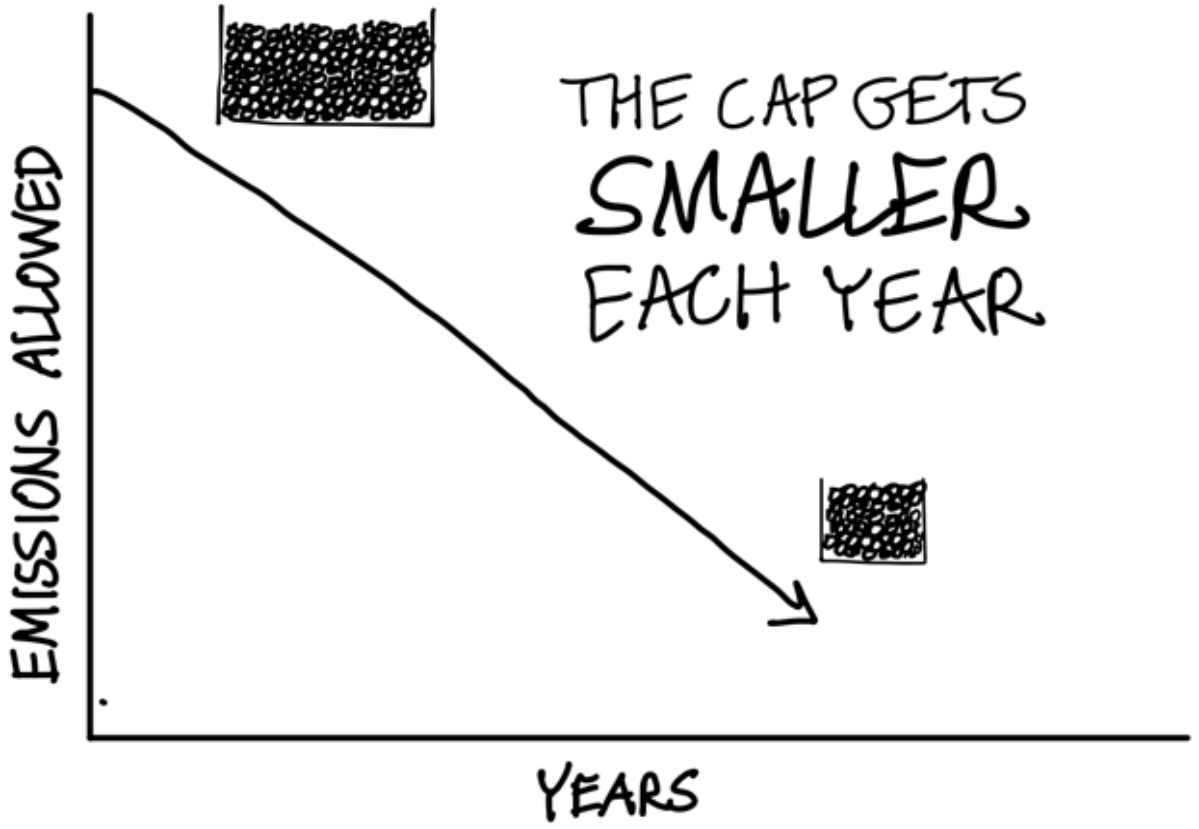
How does a cap-and-invest program work?



Graphic:
Franz Litz (adapted)

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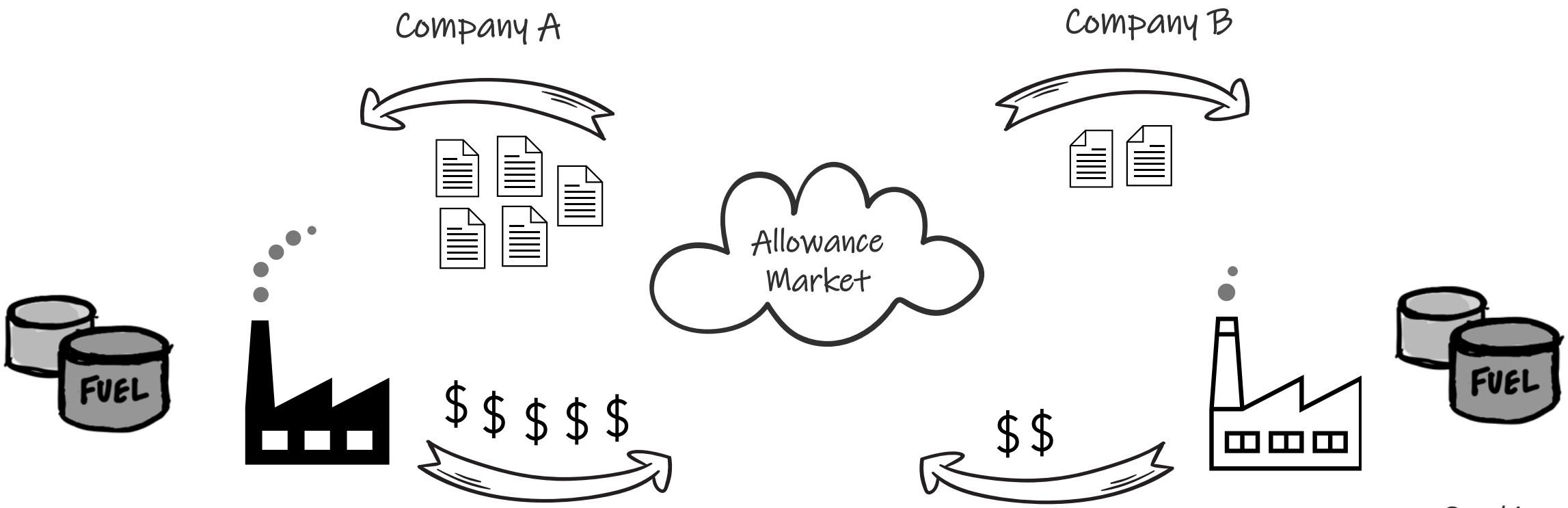
A cap-and-invest program lets the market decide how to reduce emissions



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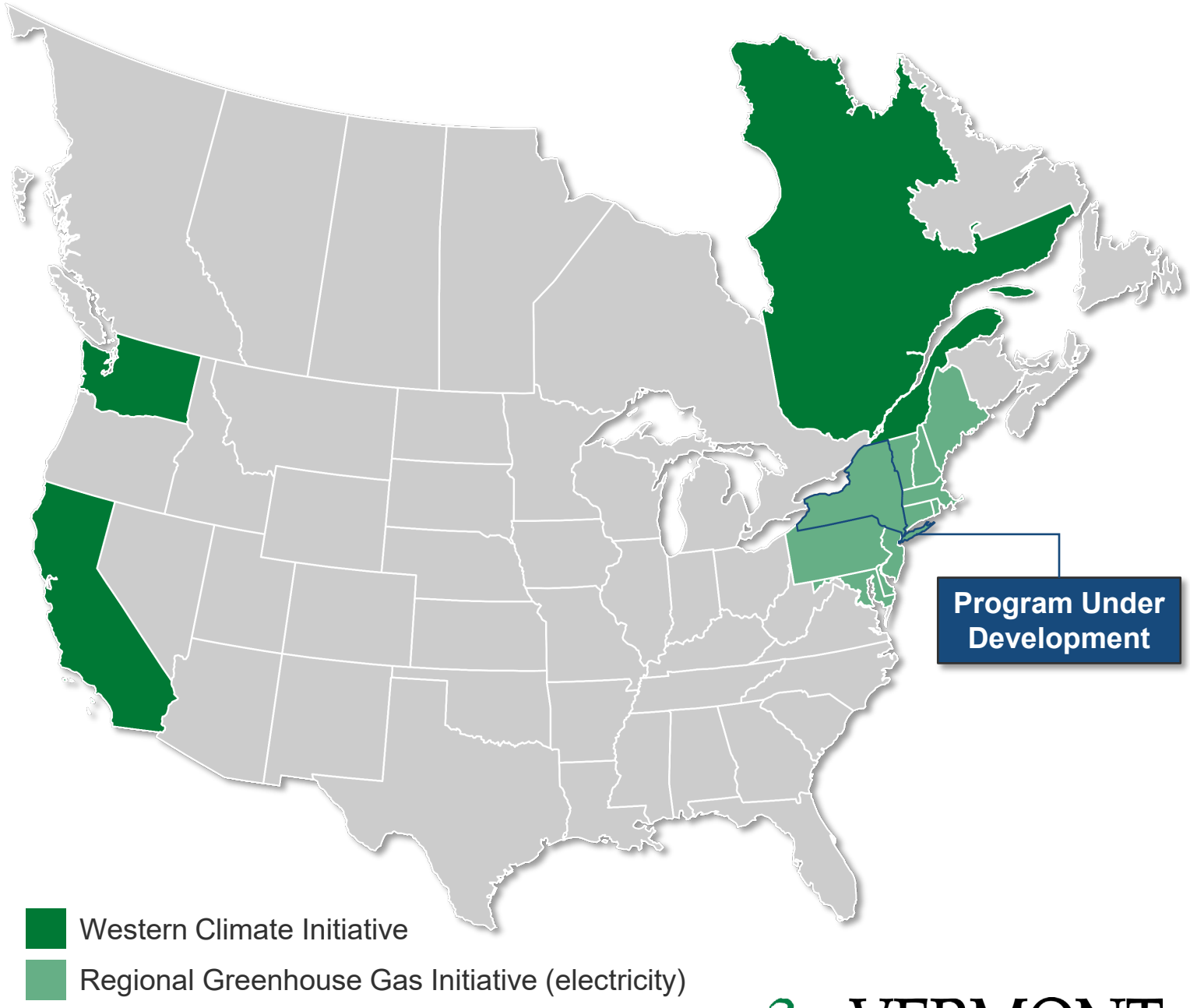
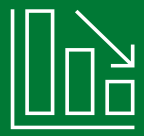
Other states and provinces are doing cap-and-invest



How could cap-and-invest affect Vermonters?

Benefits

- More money into climate action, such as energy efficiency programs, EV, and resilience 
- More jobs in the climate workforce 
- Improved health and environment 
- Improves decision making for businesses by formalizing a timeline for emissions reductions 

Impacts

- Higher prices for conventional fossil fuels 
- Potential border effects with non-participating neighbors 

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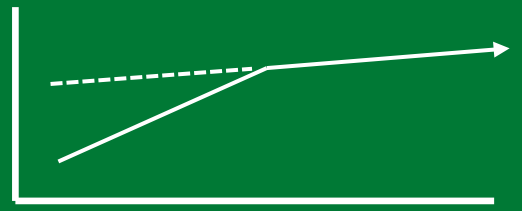
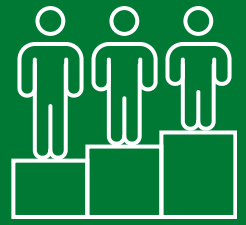
How could the state make sure a program is affordable for Vermonters?

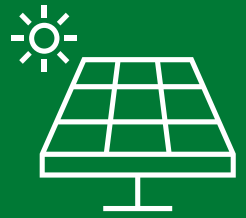
Set an upper limit on the emissions price



Target proceeds to ensure equity



Make it easier to switch to clean energy



Allocate emissions to at-risk industries

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Proceeds can be reinvested into clean energy and efficiency programs

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SUMMARY: Why consider cap-and-invest?

Declining emissions cap provides more certainty about emission reductions

Price on carbon pollution provides a signal to influence future investments

Proceeds can be equitably reinvested into energy efficiency & pollution reduction strategies that benefit Vermonters

Complements and supports other pollution reduction policies

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What did Vermont study?

Act 148 of 2024 (the T-Bill) requires:

The State in coordination with the VCC to develop a written analysis to:

- Address the pros, cons, costs, and benefits of Vermont participating in regional or cap-and-invest program, such as the Western Climate Initiative (WCI) and the New York Cap-and-Invest program;
- Explore the adoption of a clean transportation fuel standard

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The study…

The study estimated …

1. the amount of emissions reduction that could be generated
2. the revenue that could be generated for reinvestment
3. potential benefits and impacts to Vermonters
   a) Household costs
   b) Jobs
   c) Social cost of carbon
   d) Health benefits
4. the resources needed to administer a program and timeline

The study is providing information to support a recommendation from the Treasurer's Office to the Legislature about a cap-and-invest program.

Advisory, Public, & Stakeholder Involvement

- Five Technical Advisory Committee meetings
- Two virtual public meetings (October 2024)
- Focus groups (October/November 2024)
  - Potentially obligated industries
  - Business community
  - Environmental and community-based organizations, including equity/ environmental justice groups
- Study Webpage

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Program Options

Program to Join:

Western Climate Initiative
- CA, Quebec, possibly WA
- In operation since 2013

New York Climate Initiative
- New York State
- Not established yet
- Earliest start is 2027

Sectors to Include:

Transportation

Transportation + Residential / Commercial / Industrial Fuels

Transportation + R/C/I Fuels + Industrial Processes

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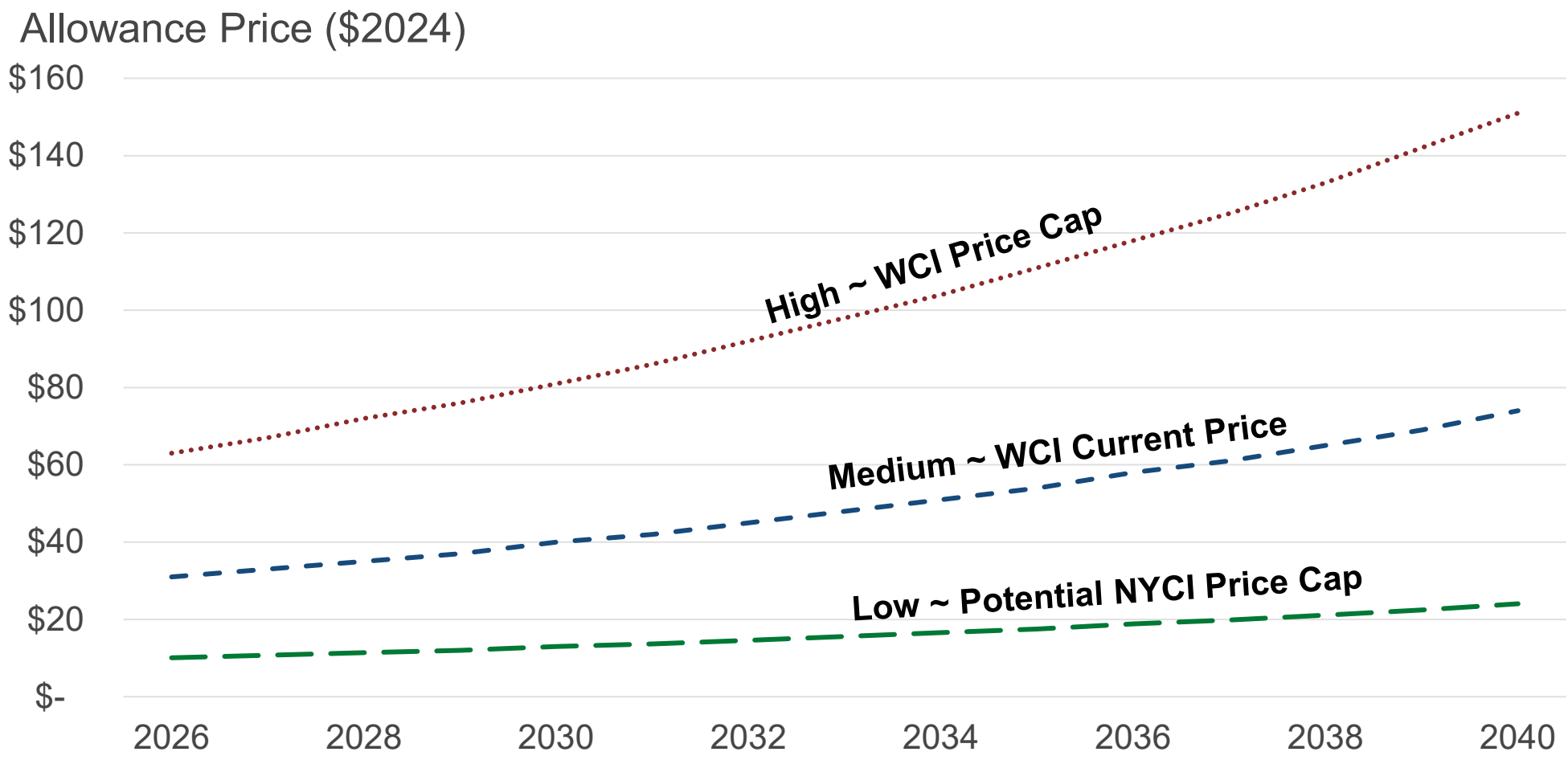
Modeled Allowance Price Trajectories



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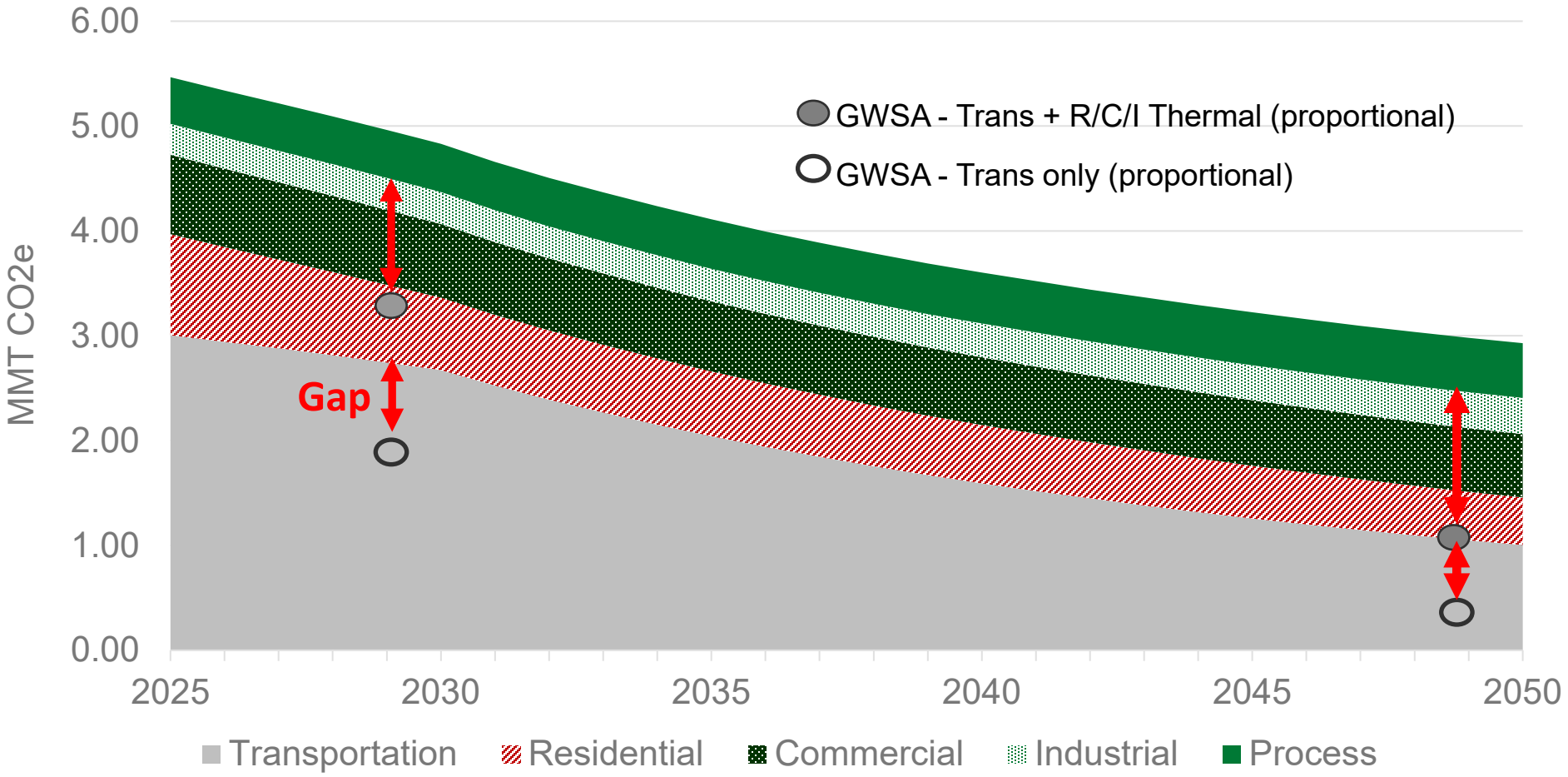
Baseline Emissions and GWSA Levels



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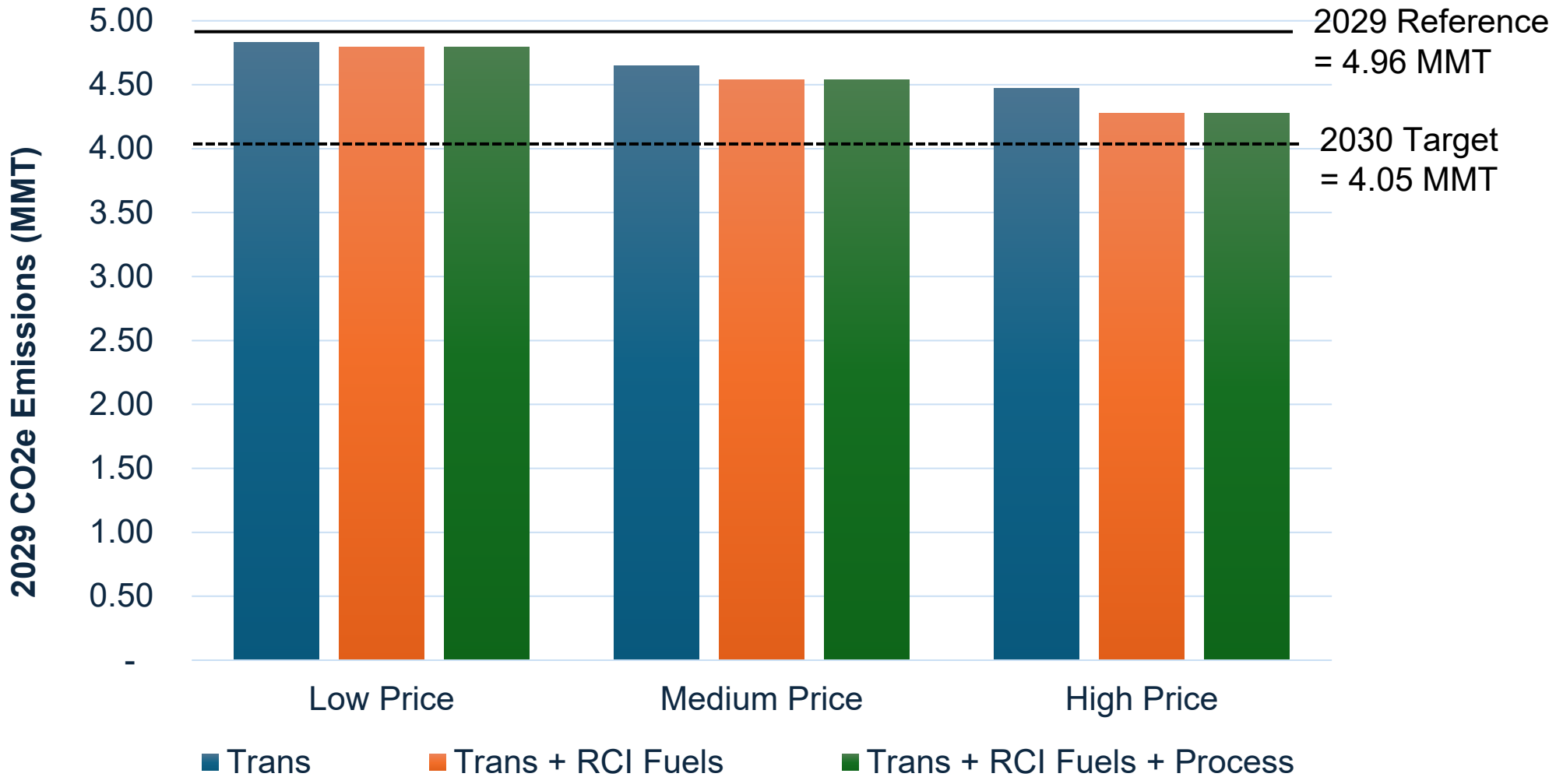
2029 Emissions with No Reinvestment



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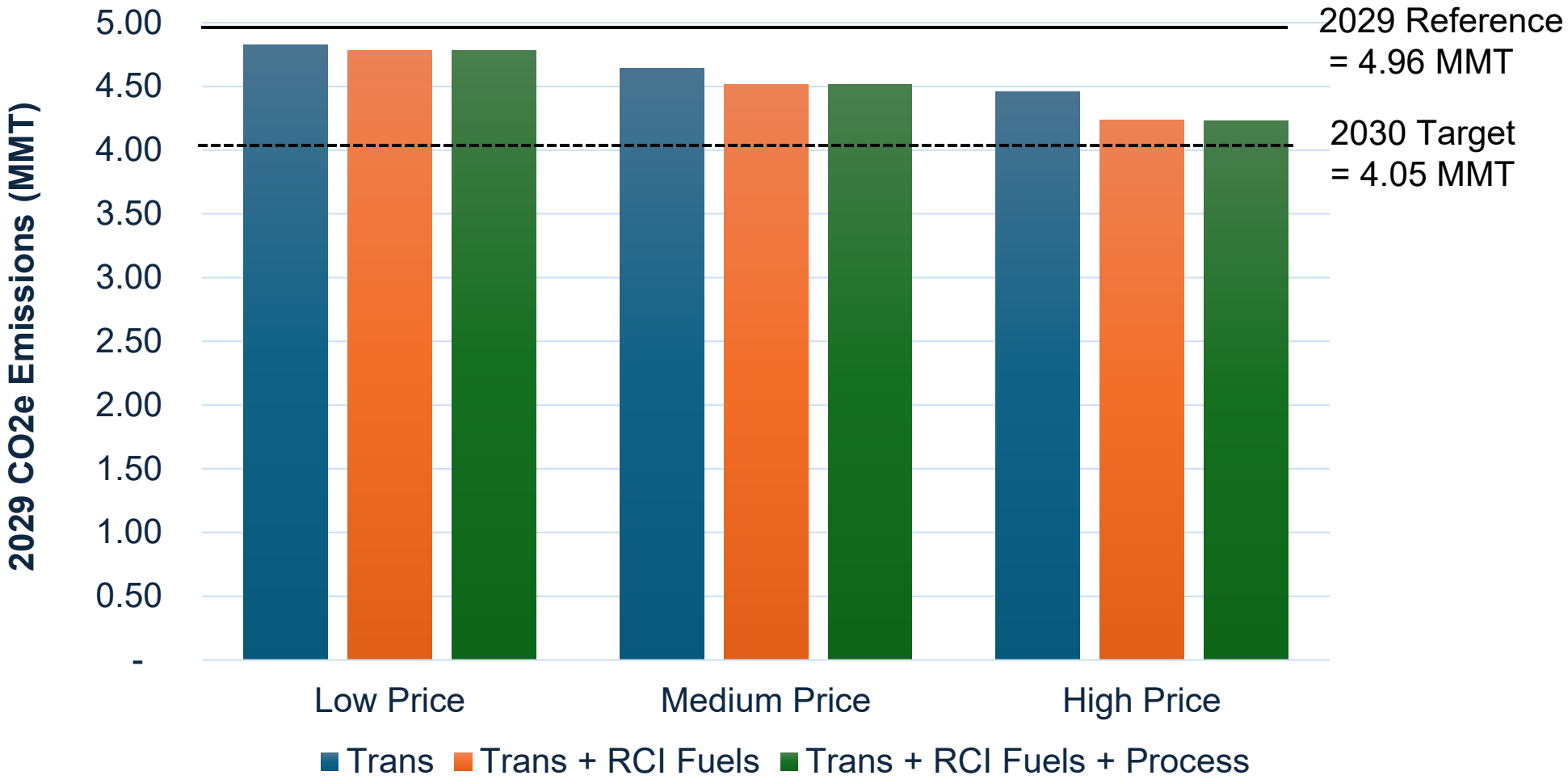
2029 Emissions with Full Reinvestment



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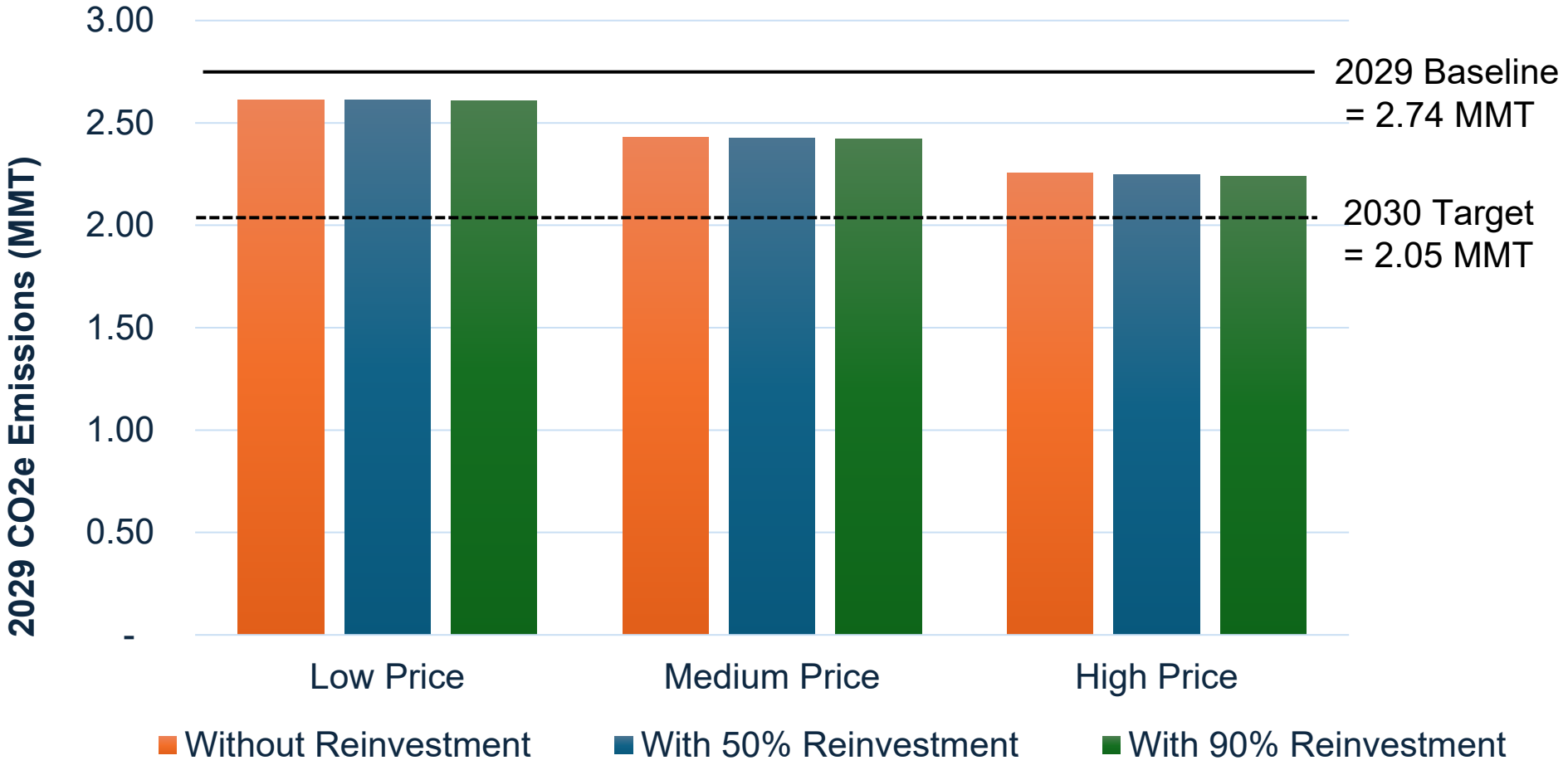
2029 Transportation Emissions



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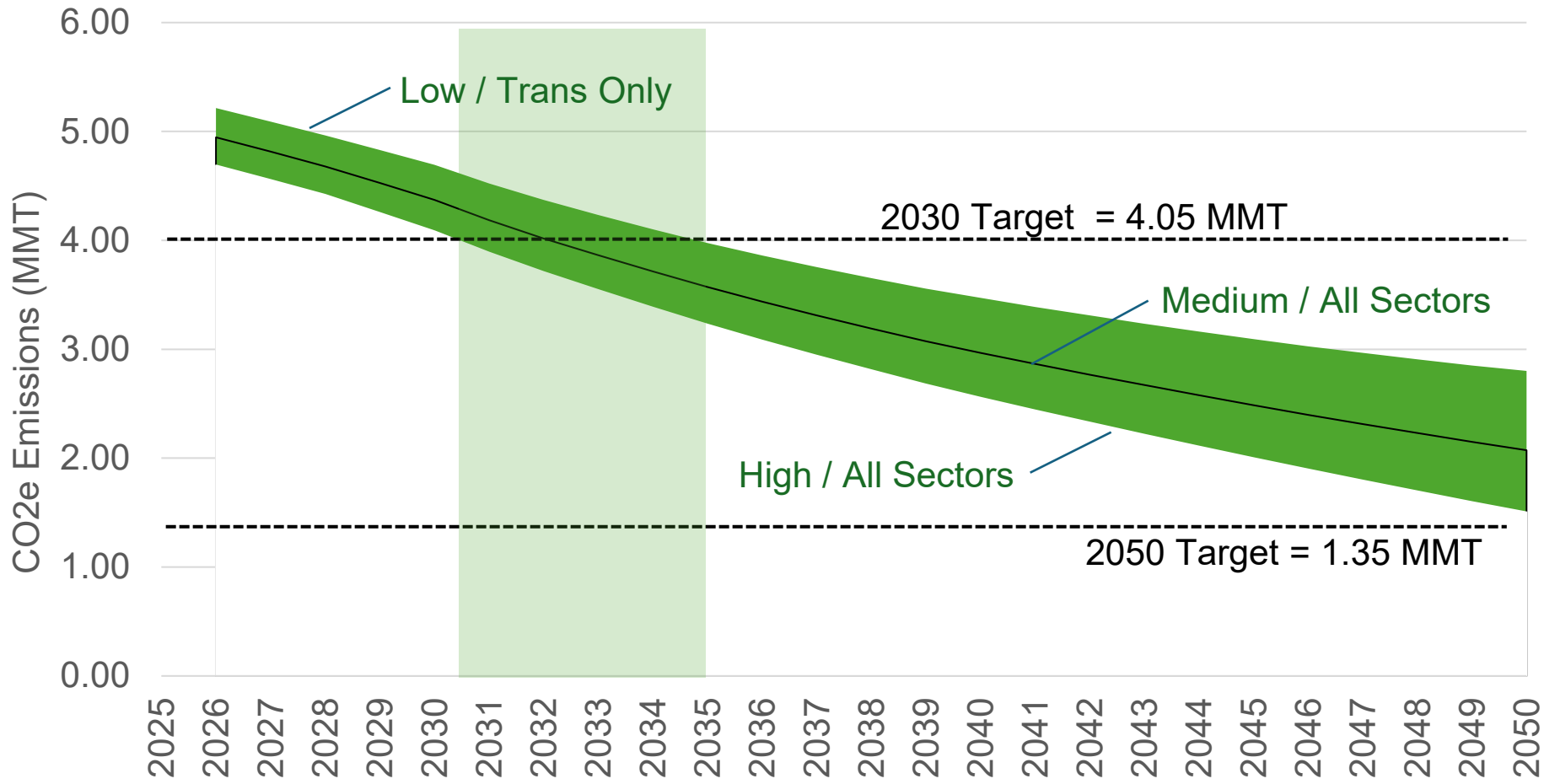
Projected Emissions by Scenario
(50% reinvestment)



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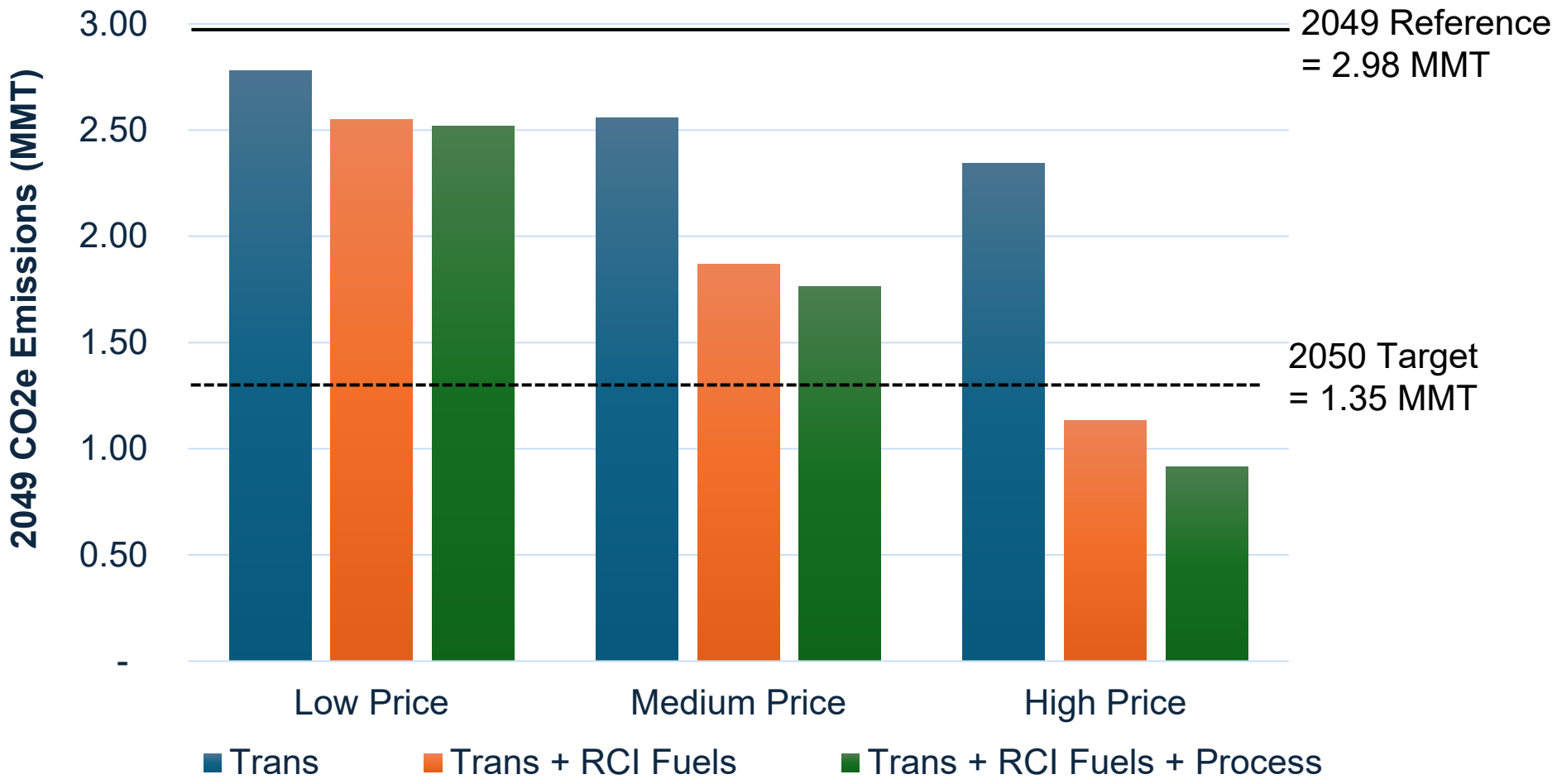
2049 Covered Sector Emissions
(Full Reinvestment)



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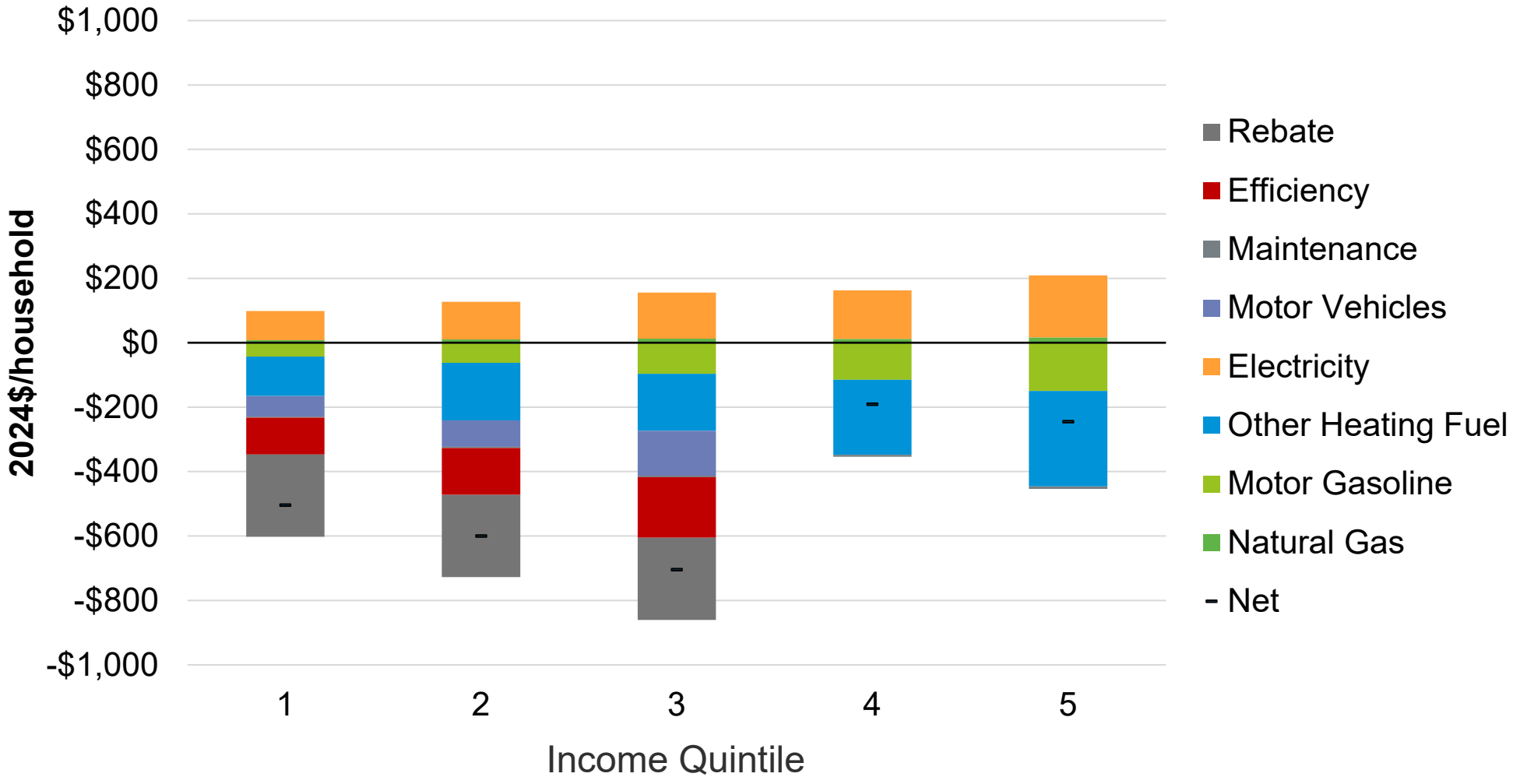
Estimated 2030 Auction Proceeds (2024 $M)

Scenario	Transportation	Transportation + Thermal	Transportation + Thermal + Process
Low Price	$ 32	$ 54	$ 59
Medium Price	$ 94	$ 157	$ 175
High Price	$ 177	$ 299	$ 336

Household Expenditure Change in 2030

(Medium price, trans and thermal sectors, 50% reinvestment)



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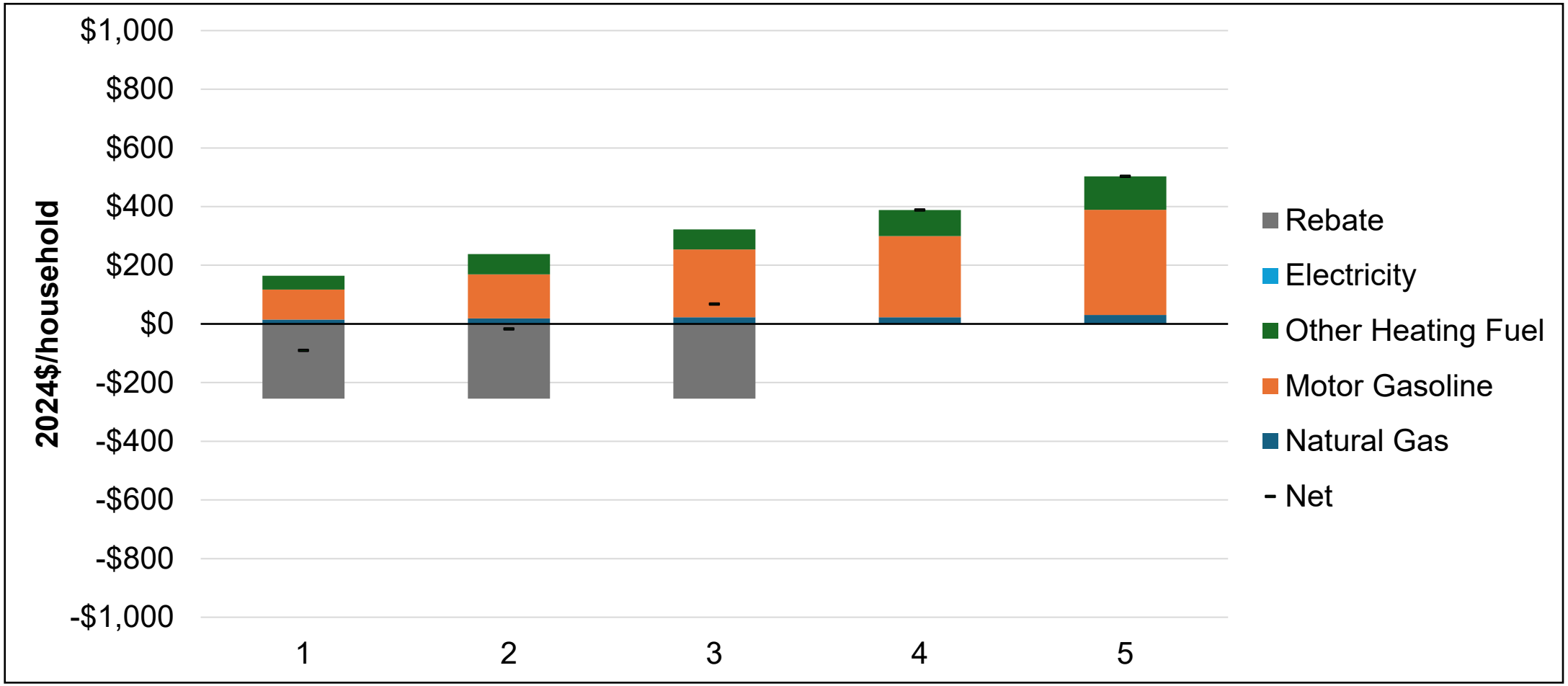
Household Expenditure Change

(Medium price, trans and thermal sectors, 50% reinvestment)



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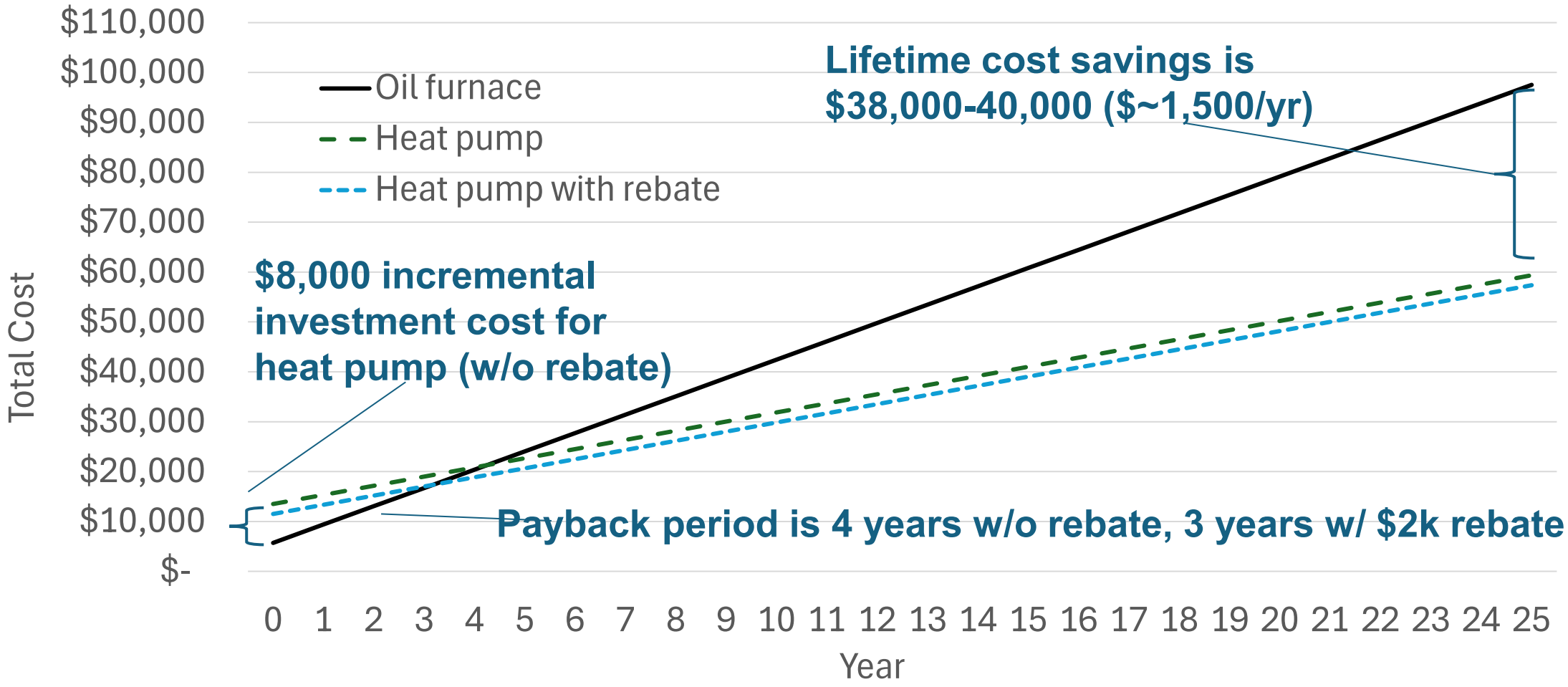
Illustrative Household Cashflow – Heat Pump Replaces End-of-Life Oil Furnace



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Summary Evaluation

Price Scenario	Gap vs. 2030 Limit (mmt)	2030 Limit Reached by…	2030 Auction Proceeds ($M)	HH Cost Net Impact[a]	New Jobs	Social Cost of Carbon ($M)	Value of Health Benefits ($M)
Low	0.74	2035	$30-60	$0 – ($230)	80-140	($40-50)	$50
Medium	0.48	2032-2034	$90-180	($10) – ($600)	230-430	($90-130)	$120
High	0.20	2031-2032	$180-340	($60) – ($1100)	430-810	($140-210)	$190

a High value is average change *in fossil fuel costs* for households *not reducing consumption or fuel switching, but including dividends. Low value is* average change in *all costs*, inclusive of dividends and rebates, and inclusive of *reduced consumption and fuel switching.* All metrics are only for lower 60% of households by income.

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Low-Carbon Fuel Standard

- Requires fuel suppliers to reduce ***intensity*** of carbon emissions per unit of fuel – not total emissions
- Covers life-cycle emissions, including out-of-state upstream
- Generates credits specifically for ***producers of low carbon fuels*** including biofuels and electricity
- Is complementary to a cap-and-invest
- Could be implemented independently

Low-Carbon Fuel Standard – Evaluation Criteria

Criterion	Considerations
Emissions reduction	• Additional benefit, some might be out-of-state
Revenue generation	• No net public sector impact
Allowance prices	• Could reduce cap-and-invest prices
Change in fuel / energy cost	• Modest short-term increase in conventional fuels (~$0.10/gal), electricity prices decrease
Macroeconomic effects	• Small net gain in jobs
Household impacts	• Related to fuel cost changes
Health benefits	• Benefits from emission reductions, especially diesel
Implementation costs	• Additional administrative costs

Summary of Stakeholder Input

Potentially Obligated Entities and Other Businesses

- Potential support from renewable fuel industry
- Concerns over potential cost impacts and business growth
- Concerns over administrative requirements for obligated entities
- Preference for one emissions regulation program over multiple sector-specific programs
- Questions about small fuel distributors and distributors who cross state borders on a delivery route
- Need better understanding about what program would mean for specific parties

Summary of Stakeholder Input

Environmental and Community Groups

- Strong support for program as a cost-effective way of achieving emission reductions
- Program provides a pool of resources for reinvestment in emissions reduction - no other new funding opportunities on the horizon
- Focus on supporting equity
  - Make sure rural and low-income Vermonters are not left behind or overburdened in the energy transition
- Involve people in conversation about use of funds
- Communicate the “how” and “why” of the program

Summary Findings on Effectiveness

- Cap-and-invest would support **additional progress** towards GWSA emissions requirements
- 2030 GWSA levels for covered sectors are likely to be reached by the **early- to mid-2030s**
- Cap-and-invest would **move the state closer to its 2050 levels**, with the following program choices affecting how much the gap is closed:
  - Joining a program with a higher expected allowance price (WCI)
  - Covering multiple sectors
  - Reinvesting a substantial share of proceeds in emissions–reducing activities
  - Also implementing a low-carbon fuel standard

Summary of Benefits and Impacts to Vermonters

- Fossil fuel prices are likely to increase by 10 to 30 cents per gallon initially
- Auction proceeds will be returned to consumers and businesses in the form of dividends and/or rebates
- How the proceeds are spent will affect who benefits
- ***Low- and moderate-income households can be insulated from fuel price increases through income-targeted dividends***
- Vermonters will also see benefits in other forms:
  - Net new job creation
  - Cleaner air and improved public health

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Summary of Feasibility and Timing Considerations

- WCI (California and Quebec) is operating; NYCI still under development
- Earliest practical start date for either is likely to be **2028**
- Could start with a **reporting-only year** in 2027
- Current program members (WCI = CA/QC or NY) would need to approve terms of VT's participation
- Vermont will require time to **ramp-up a program**, both implementation and management/investment of proceeds
- Proceeds could start to be spent and generate emissions benefits in **2029-2030** and beyond

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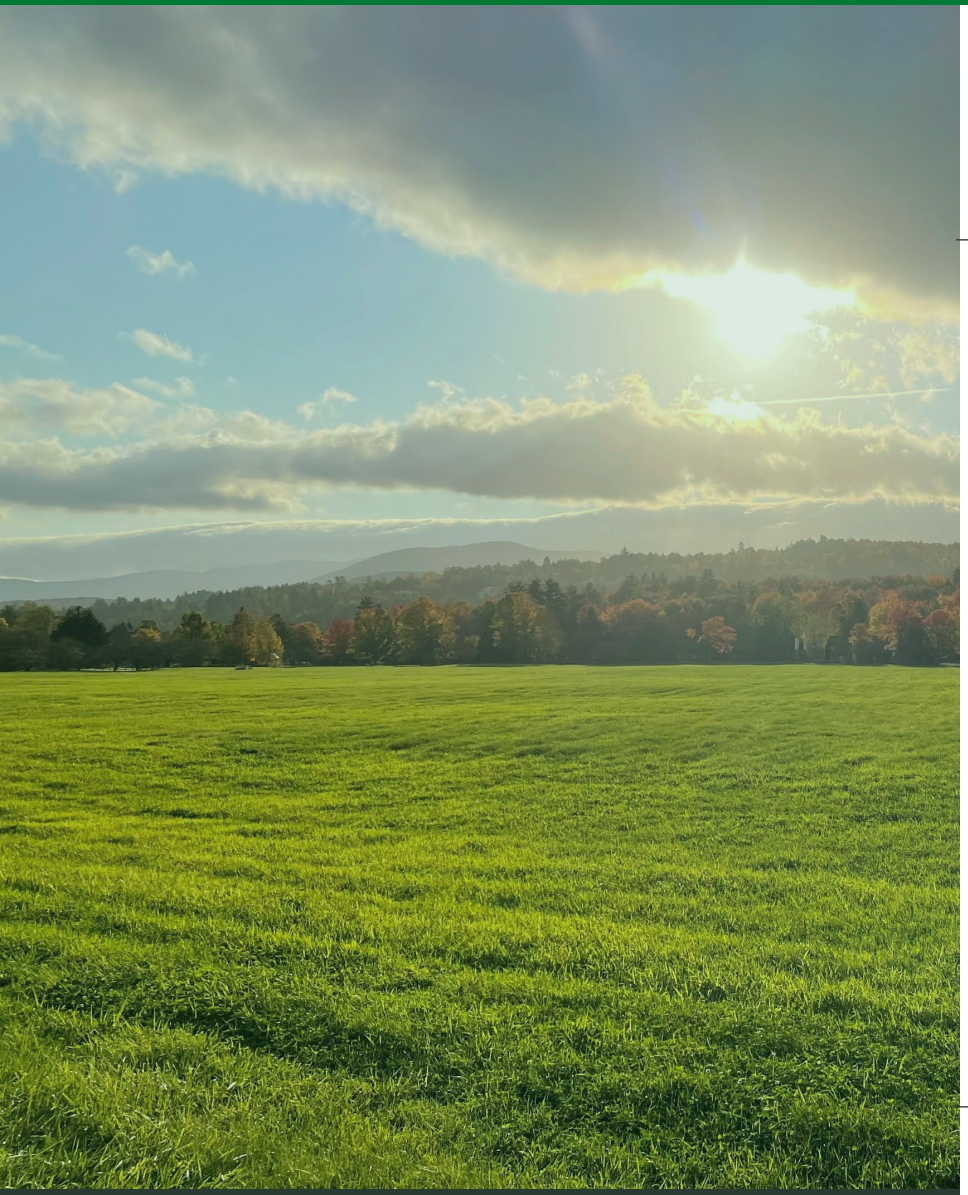

Questions and Comments

Visit the Study Website at:

climatechange.vermont.gov/cap-and-invest-study

Share your thoughts with the study team:

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