

AGENCY OF NATURAL RESOURCES

TESTIMONY ON S.5

Julie Moore, Secretary
January 26, 2023

Overview

Significant points of concern with S.5:

1. Process

- Limited analysis of costs and impacts; no requirement that costs be examined before final legislative action
- Critical data gaps
- Administrative complexity
- Ability to ensure equitable distribution of clean heat measures

2. Timeline and procedural equity

Global Warming Solutions Act and CHS

GWSA created Climate Council and required [Climate Action Plan](#) (CAP)

Climate Council was directed by the GWSA “to prioritize the **most cost-effective**, technologically feasible, and equitable greenhouse gas emissions reduction pathways and adaptation and preparedness strategies **informed by scientific and technical expertise.**” [10 VSA 592\(d\)\(1\)](#)

CAP analysis of Clean Heat Standard was limited:

- Impact: “TBD based on program design”
- Equity: “Can be designed to mitigate the disproportionate energy burdens and negative distributional effects of existing heating fuel costs on low- and moderate-income Vermonters.”
- Cost-effectiveness: “TBD based on program design”

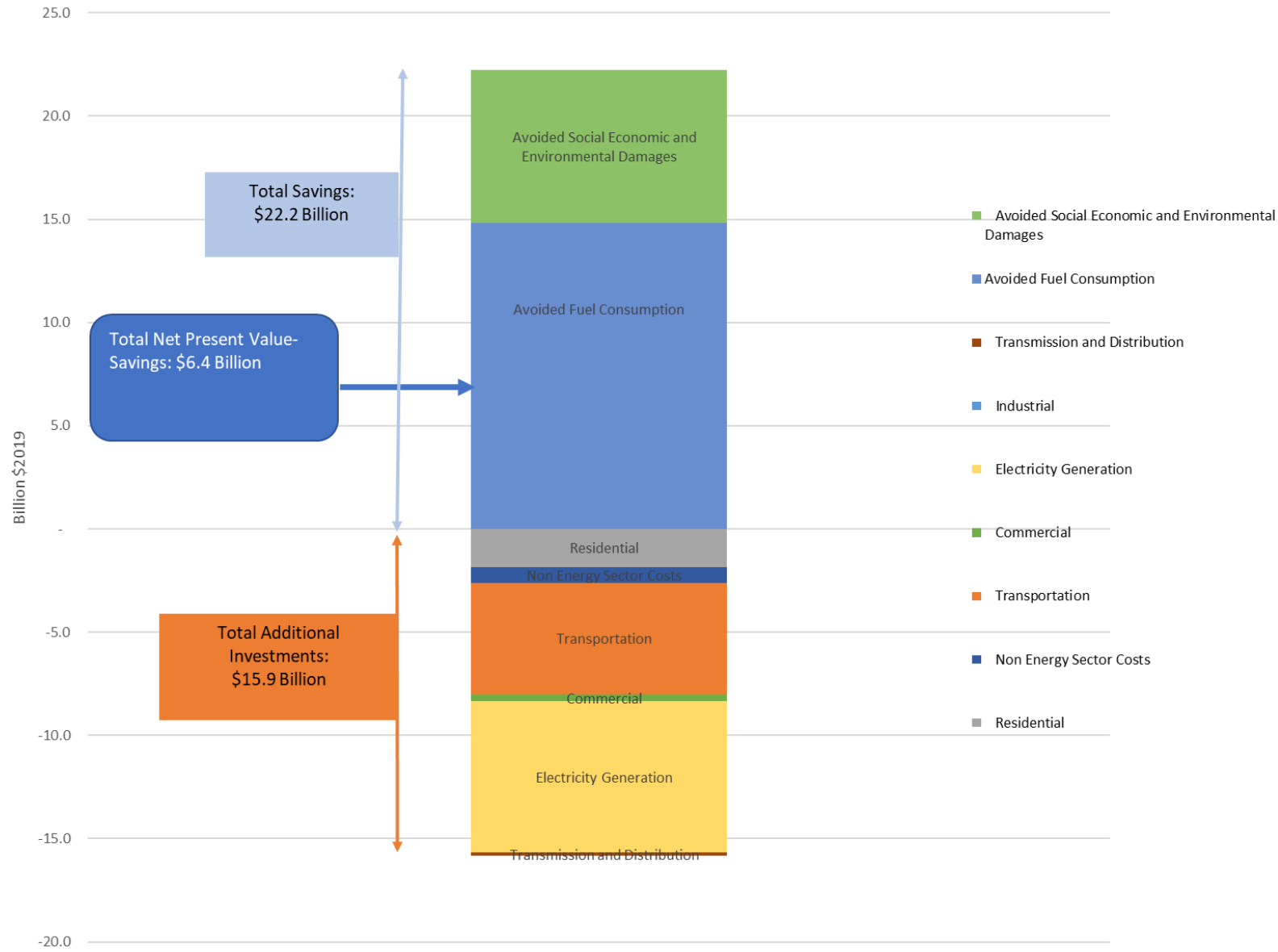
Global Warming Solutions Act and CHS

Pathways Report provides scenario modeling that *...is beneficial for visualizing the scale and pace of transformation necessary to achieve emissions reductions. Results presented ... are intended to inform design of GWSA compliant policies.*

Specific to the 2030 Building/Thermal Sector reductions the Pathways Report notes:

- *Securing workers and businesses to meet this volume of activity is going to require innovation, fresh thinking, increased funding, and hard work.*
- *There will be numerous challenges to meeting the level of building performance upgrades in the mitigation scenario by 2030, including the pace and scale for heat pumps and the pace for delivery of weatherization. Another important element ... will be financing to help make the initial costs of upgrades affordable...*

CAP Mitigation Savings and Investments vs. Baseline (Including Social Cost of GHGs)
 Net Present Value 2015-2050 (2019\$), 2% Discount Rate

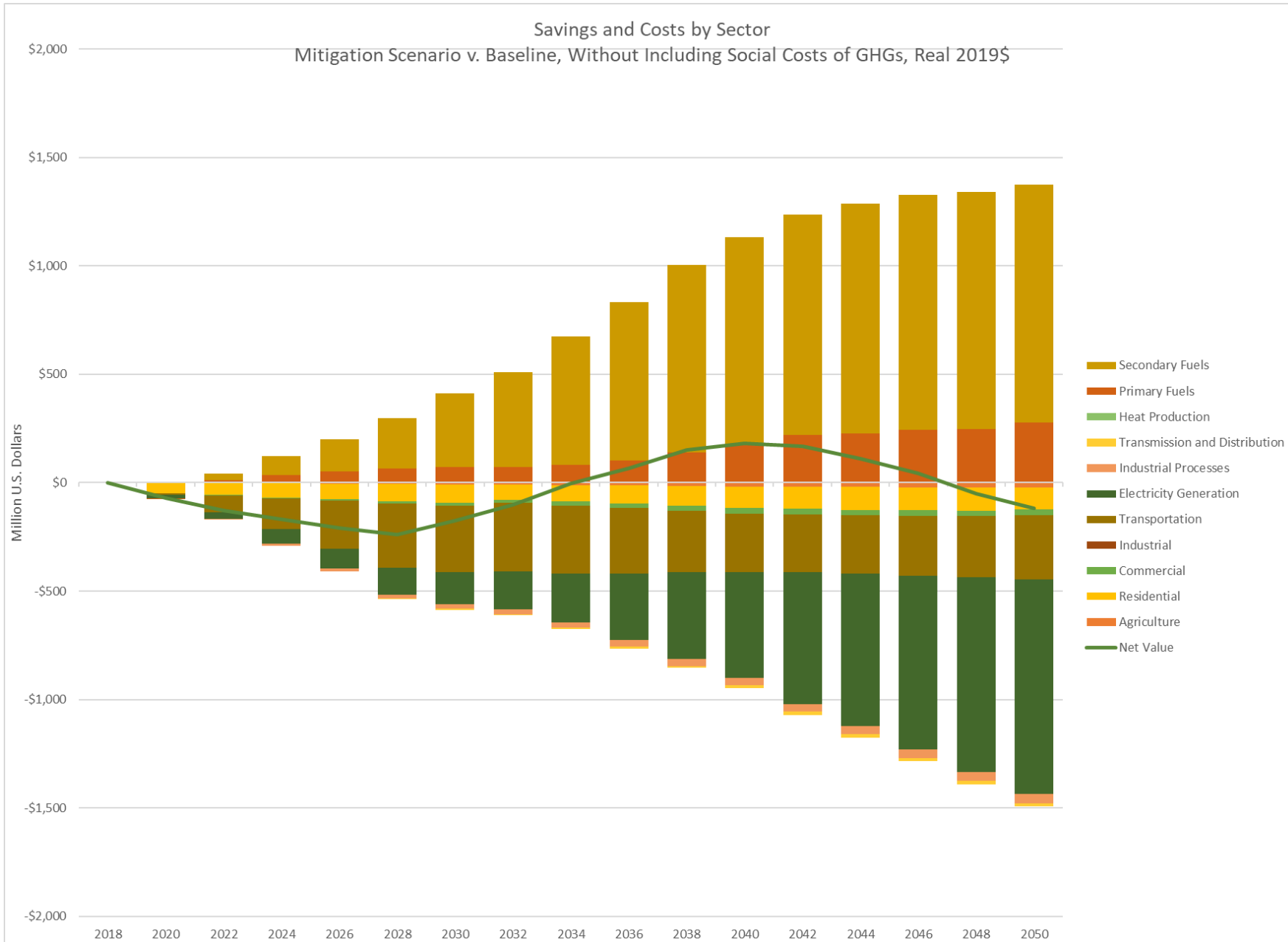


Transitioning to a clean energy economy will require upfront investments to achieve long-term benefits.

- Pathways Report

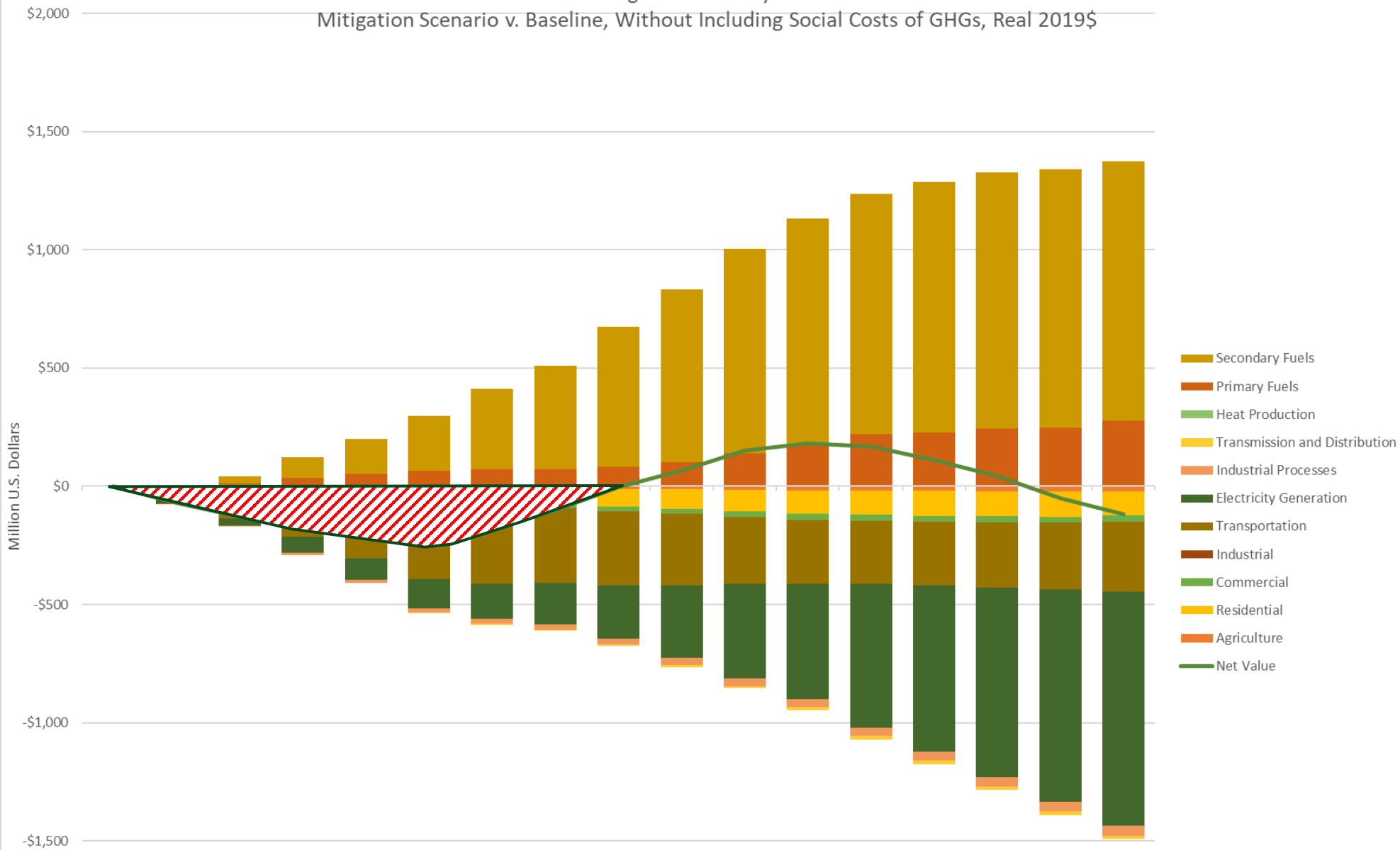
Savings and Costs by Sector

Mitigation Scenario v. Baseline, Without Including Social Costs of GHGs, Real 2019\$



Savings and Costs by Sector

Mitigation Scenario v. Baseline, Without Including Social Costs of GHGs, Real 2019\$



Limited Analysis of Costs and Impacts: Scale of Clean Heat Measure Implementation

S.5 directs that the annual requirement for clean heat measures be set at a pace sufficient for Vermont's thermal sector to achieve GHG reductions consistent with the GWSA (§ 8124(a)(1))

Drawing from the Pathways Report, this effectively requires the following by 2030:

- 85,000 homes weatherized
- 145,000 heat pumps installed
- 125,000 heat pump hot water heaters installed

Directional Estimate of Gross Building/Thermal Sector Costs Required by GWSA thru 2030

85,000 homes weatherized @ \$10,500 each	= \$890 million
145,000 heat pumps @ \$5000 each	= \$725 million
125,000 heat pump hot water heaters @ \$3,000 each	= \$375 million

Estimated gross cost: \$2.0 billion

Does not include administrative costs

- State Government
- Default delivery agent

Not dissimilar from *Pathways Report* estimate of net costs in the residential sector from 2020-2030 of \$1.6 billion to meet the GWSA requirements, which includes fuel cost savings

Directional Estimate of Revenue Required to Meet 2030 GWSA Building/Thermal Sector

Efficiency Vermont incentives for residential sector clean heat measures generally average 75% for low- and moderate-income Vermonters

- Given the timeline envisioned by S.5, reasonable to assume that higher level of incentive will be required to ensure uptake
- Assume 90% cost-share will be needed to ensure pace to 2030
- *Unmet investment need (thru 2030): \$1.8 billion*

Assume federal funding programs (ARPA, IIJA, IRA, CDS) provide \$75 million per year (for 8 years) for clean heat measures, or \$600 million

- *Total needed investment remaining: \$1.2 billion*

Directional Estimate of Revenue Required to Meet 2030 GWSA Building/Thermal Sector

Continuing... Total needed investment remaining: \$1.2 billion

Assume CHS takes effect January 1, 2026:

- Assume fuel suppliers will “absorb” (rather than pass along) 25% of the cost to obtain clean heat credits
 - Total needed investment remaining: \$900 million, or \$180 million per year
- Absent dedicated state revenue, under the CHS, it is reasonable to expect that fuel suppliers will look to raise this revenue balance from fuel sales

Vermont sells about 250 million gallons of fossil heating fuels per year

- To raise \$180 million per year on 250 million gallons could raise the price of a gallon of heating fuel by 70 cents per gallon
- As the amount of fossil fuel consumed annually in Vermont drops over time (as a result of the CHS), the adder on remaining fossil fuel sales likely to increase

Act 62 (2019) – Report on All-Fuels Energy Efficiency

Fuel tax is set in statute and has not been adjusted since 2016

Fuel tax rate is 2 cents per gallon on the sale of fuel oil, kerosene, propane, and other dyed diesel fuel

- Funds are mostly spent to support the low-income Weatherization Assistance Program Trust Fund; some funds also allocated to LIHEAP

To expand weatherization, Act 62 Report recommended increasing the tax on the sale of fuel oil, kerosene, propane, and other dyed diesel fuel, from the current 2 cents per gallon to:

- 4 cents per gallon in 2021
- 6 cents per gallon in 2023

No legislative action was taken as a result of this study

Critical Data Gaps

Fuel data

- Currently, Tax collects aggregate data on “Number of GALLONS of heating oil, propane, kerosene, and other dyed diesel fuel delivered in Vermont” (Form FGR-615)
 - Sales of natural gas and coal are tracked separately
- Impacts ability to establish/appropriately value clean heat credits

Regulatory relationship with “obligated entities”

Last customer problem

Rate of deployment of clean heat measures

- Can this be achieved thru passive incentives?
- Does this allow comprehensive, whole-home solutions?

Administrative Complexity

Clean Heat Credits

- Calculating clean heat credits
- Establishing clean heat credit system
- Verifying early action credits

Carbon intensity of fuels

Equitable Distribution of Clean Heat Measures

Climate Action Plan: *The Climate Council recommends that the legislature include requirements to deliver a high fraction of clean heating solutions to low- and moderate-income households in the early years.*

S.5: *...each obligated party shall retire at least 16 percent [or clean heat credits] from customers with low income and 16 percent from customers with moderate income.*

Equitable Distribution of Clean Heat Measures

2021 Vermont Personal Income Tax returns

- Vermont MHI was about \$68,000 in 2021
 - ~63% of Vermont filers fall under that threshold
- 120% of Vermont MHI is considered moderate-income; was about \$81,000 in 2021
 - ~71% of Vermont filers are under that threshold

S.5 requires “at least” 32% of clean heat measures to 71% of the population?

Public Engagement and Procedural Equity

S.5 allows 16 months (August 31, 2023 - January 15, 2025) for the PUC to:

- Conduct pre-rulemaking engagement with stakeholders
- Draft rules
- Formally solicit and address public comments
- Prepare and submit final proposed rules to the implement the Clean Heat Standard to the General Assembly

Timeline is inconsistent with the Guiding Principles developed by the Just Transitions Subcommittee of the Climate Council

- *Planning and implementation must balance being time bound and honoring the varied ways of learning, understanding and agreement that exist in different cultures and communities*

Necessary Due Diligence

S.5 is akin to the creation of Efficiency Vermont in 2000

Critical to understand upfront costs and practical challenges, in addition to long-term benefits

Proposed timeline will impact procedural equity and meaningful opportunities for local communities to participate in program planning and design

Thank you.

Secretary Julie Moore

Julie.Moore@vermont.gov