Climate Action Office: Tracking progress in the Transportation Sector

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Climate Action Office
House Transportation, February 9, 2023

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Global Warming Solutions Act – Act 153

1. **Reduce greenhouse gas emissions** from the transportation, building, regulated utility, industrial, commercial, and agricultural sectors;
2. Encourage smart growth and related strategies;
3. **Achieve long-term sequestration and storage of carbon** and promote best management practices to achieve climate mitigation, adaption, and resilience on natural [and] working lands;
4. **Achieve net zero emissions by 2050 across all sectors;**
5. Reduce energy burdens for rural and marginalized communities;
6. Limit the use of chemicals, substances, or products that contribute to climate change; and
7. **Build and encourage climate adaptation and resilience** of Vermont communities and natural systems.

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Measuring and Assessing Progress

GWSA requires that the state track key components of its climate action, including:

- The State's greenhouse gas emissions and progress towards reducing emissions;
- The effectiveness of the initiatives, programs, and strategies set forth in the CAP;
- The effects of climate change on the State's climate, wildlife, and natural resources; and
- Progress towards improving existing resilience of the State's communities, infrastructure, and economy to current and anticipated effects of climate change.

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Proven Track Record – GHG Inventory

- Inventory of anthropogenic GHG emissions for Vermont, published annually
  - Required by state statute (10 V.S.A. § 582)
- Total (gross) annual emissions (not including biogenic CO_2 in gross annual totals)
  - Attempt to quantify and sum GHG emissions from all applicable sectors in Vermont
- Inventory relies heavily on federal datasets and EPA tools and therefore often lags several years behind the calendar year when the emissions occurred
- Includes emissions of gases covered in international agreed upon protocol in million metric tons of CO_2 equivalent ($MMTCO_2e$)
  - CO_2, CH_4, N_2O, HFCs, PFCs, SF_6, NF_3
- Methodologies consistent with accepted GHG inventory standards/protocols
- Transportation Sector Utilizes fuel sales data (part JFO part EIA SEDS data)
  - Ethanol and biodiesel fractions removed

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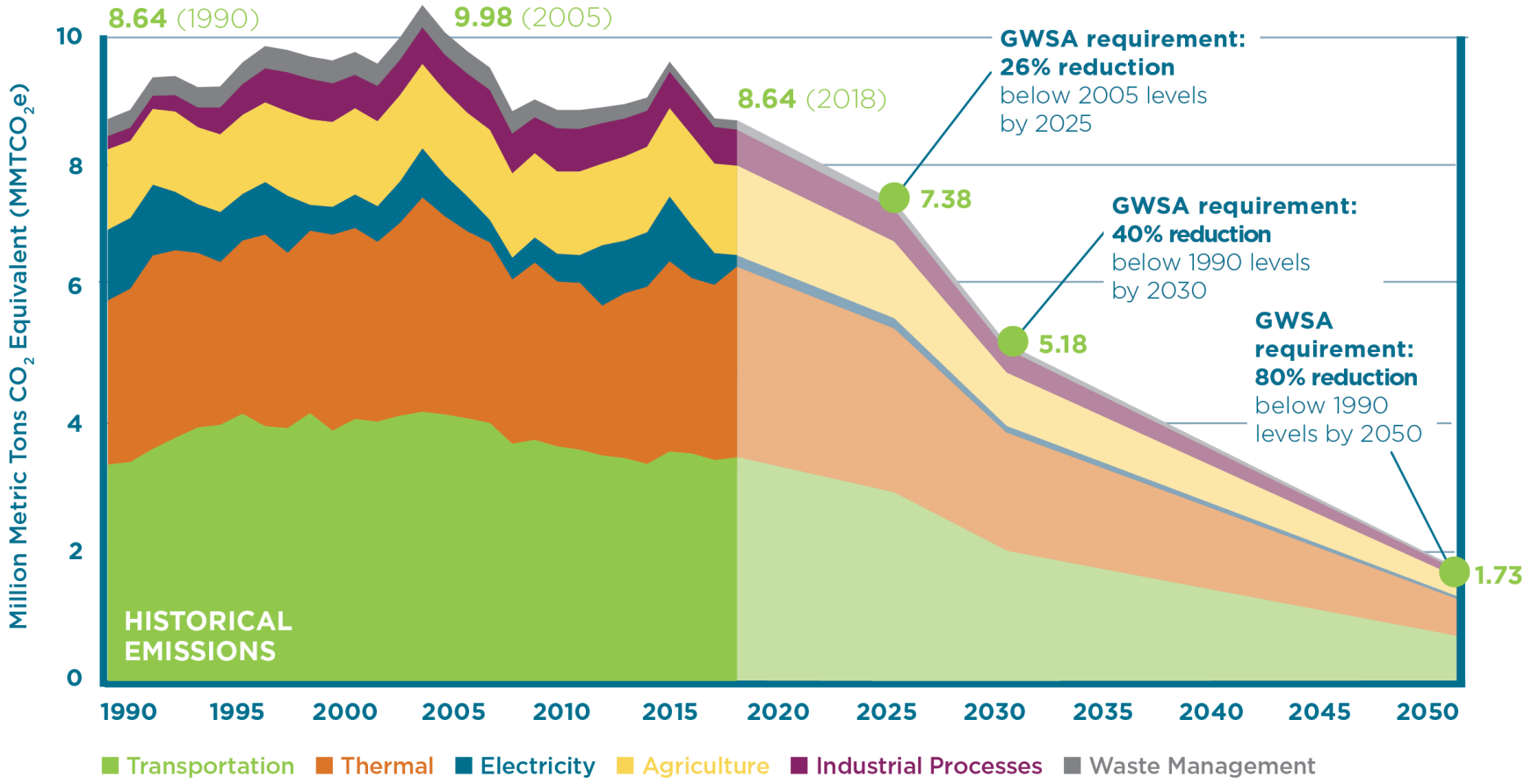
Vermont's historical GHG emissions and future requirements



Source: Vermont Agency of Natural Resources, Vermont GHG Emissions Inventory and Forecast (1990-2017), 2021.

ENERGY ACTION NETWORK

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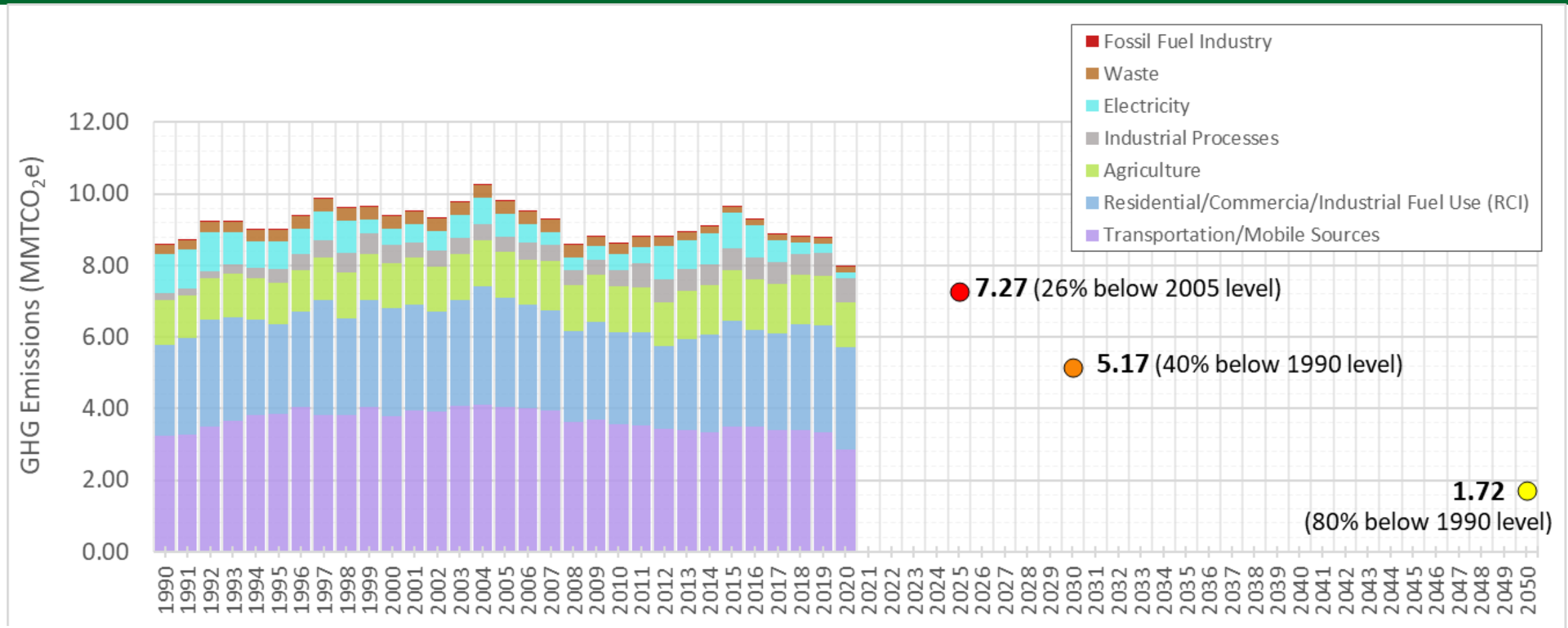

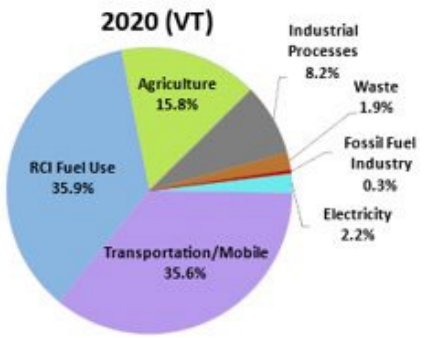

Figure 2: Vermont GHG percent contributions by sector.

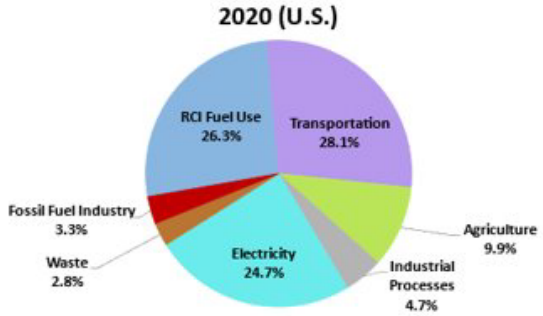

Figure 3: U.S. GHG percent contributions by sector. Data for the U.S. contributions by sector has been reallocated to match the Vermont sector categories in this report.

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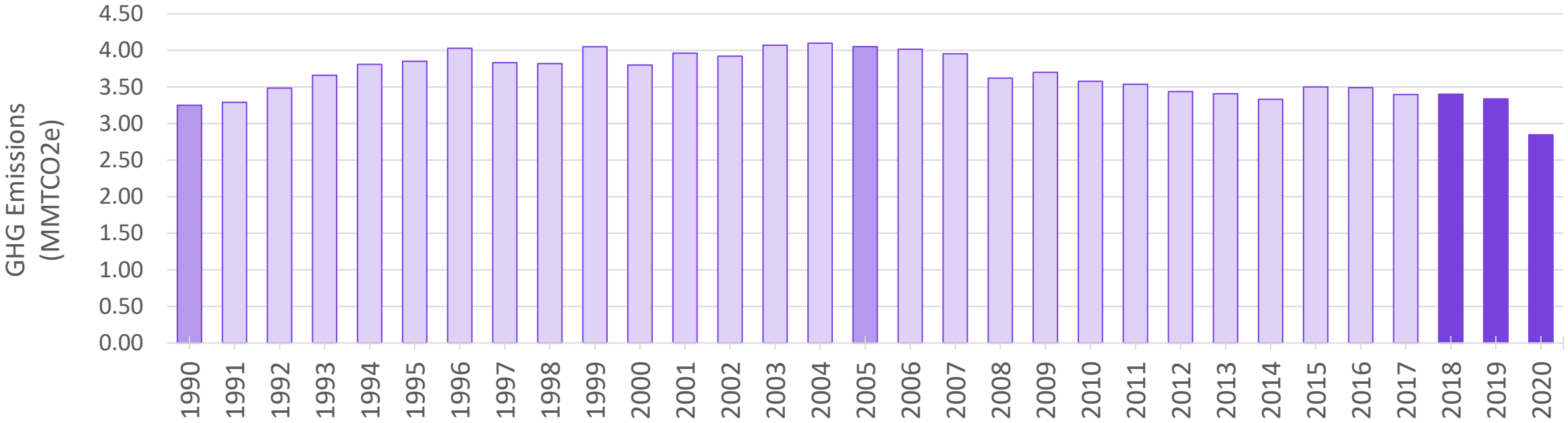
GHG Emissions (MMTCO2e)
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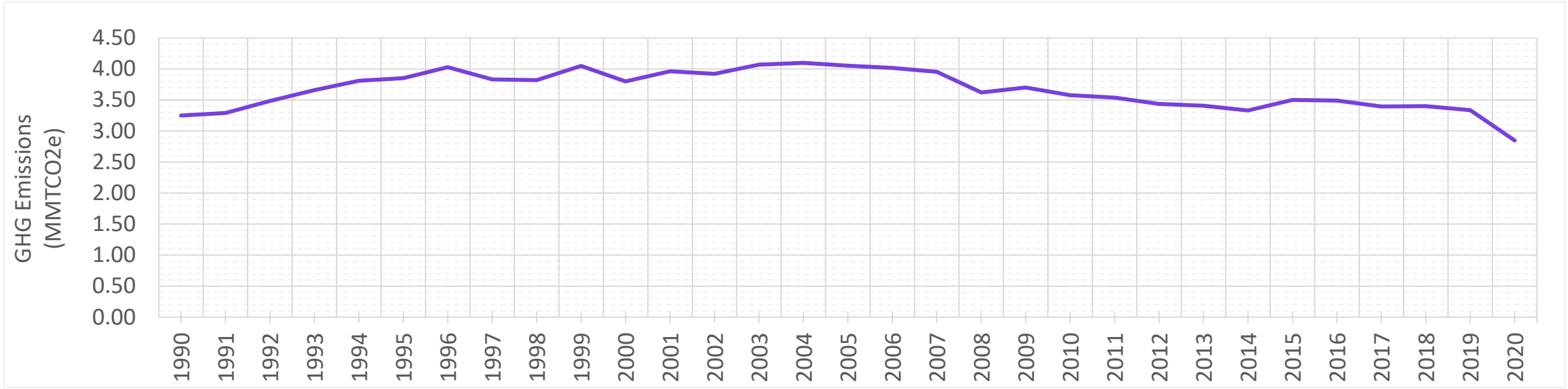
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GHG Current Datasets and Limitations

- Existing datasets used to track fuel sales/evaluate GHG emissions include:
  - State data from ANR, DMV, PSD and Tax
  - Data submitted to EPA thru the Greenhouse Gas Reporting Program
  - Larger federal datasets from USDA, Energy Information Administration, etc.
- Limitations in these datasets include:
  - Lags in data-sharing, particularly from federal datasets
    - Slows development of Vermont's GHG Inventory
  - Granularity of the data → fuel products and amounts
- Anticipate release of the next *Vermont Greenhouse Gas Emissions Inventory and Forecast* [aka GHG Inventory] in March 2023
  - Will cover 2018, 2019 and 2020

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Measuring and Assessing Progress Tool

- GHG Inventory was not developed to support policy design
- GHG Inventory has limited ability to quantify impact of specific programs in reducing GHG emissions and, therefore, estimate cost effectiveness
- ANR is working on the development of a Measuring and Assessing Progress (MAP) Tool
- MAP Tool will track specific practices
  - Will not replace the GHG Inventory
  - Fuel data will be more responsive to practices tracked in the MAP Tool
- MAP Tool will track more than emissions indicators → things like resilience, adaptation and community engagement metrics
- Inform annual report to Legislature

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Measuring and Assessing Progress - Objectives

1) Policy-Decision Support Tool: Support the State and its partners in making climate policy decisions with best available information.

2) Sustainable Data Management: Create a data governance plan, flexibly accommodate future data needs, and coordinate relevant data and reporting across multiple private and public entities.

3) Open and Accessible Data: Provide access to key data sources to organizations and members of the public engaged in climate action that wish to utilize Vermont's data to support their work.

4) Public Education: Inform the public about progress on achieving GWSA commitments, including GHG emissions, emissions reductions, sequestration, adaptation, resilience, and equity.

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Transportation Metrics to Track

- Bike/ped lanes installed
- Multi-modal transit opportunities
  - Transit ridership rates
- Number of registered EVs
  - BEVs and PHEVs
  - EV incentive rates
  - Average annual EV mileage?
- Vehicle Miles Traveled
- Gasoline and Diesel sales
  - Total sales
  - Fuel prices
- Available EV charging stations/ports
  - Number of home/MUD chargers installed
  - Number of workplaces with charging
  - Number of public L2 and DCFC

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Contact Us

Phase 1 Anticipated to Begin in Spring 2023

www.climatechange.vermont.gov

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