

# The Global Warming Solutions Act and the Vermont Climate Action Plan



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# Climate Change in Vermont

*More rain and flooding, changes to agriculture, different forests*



healthvermont.gov

➔ *Not everyone is impacted equally*

# Global Warming Solutions Act (GWSA), Act 153 of 2020:

- Enacted: September 23, 2020
- First meeting of the Vermont Climate Council: November 20, 2020
- Subcommittees Began Meeting in February, 2021
  - Cross-Sector Mitigation, Rural Resilience and Adaptation, Agriculture and Ecosystems, Just Transitions and Science and Data
- Initial Climate Action Plan adopted: December 1, 2021

# The Vermont Climate Action Plan

- Aim to cut climate pollution in half by 2030
- Prioritize those who are most affected
- Shaped by five subcommittees
  - ◆ with public input
  - ◆ in coordination with CEP
- Updated at least every 4 years
- Implementation section to inform decision-making
- Framework for measuring progress

# GWSA Charge to the Climate Council

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, adaptation, 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.

# The Climate Action Plan

## CAP Strategies and Actions

GHG mitigation  
(Section 592(b))

Adaptation, resilience  
and sequestration  
(Sec. 592(c))

“test” established  
in GWSA for  
required  
elements of CAP

*“...the specific initiatives, programs, and strategies, including regulatory and legislative changes, necessary to achieve the State’s greenhouse gas emissions reduction requirements...”*

*“...build and encourage climate adaptation and resilience of Vermont communities and natural systems...”*

Suite of actions  
***necessary*** to achieve...

Additional actions

Legislature

ANR  
(rulemaking)

VCC

Suite of actions  
***consistent*** with...

Legislature

ANR  
(rulemaking)

VCC

# Equity Lens: Guiding Principles for a Just Transition

*A framework for the Climate Council and subcommittees to evaluate, adjust and prioritize recommendations based on how they will impact Vermont's impacted and frontline communities.*

**01**

**Ensuring inclusive, transparent, and innovative engagement**

**02**

**Creating accountable & restorative recommendations**

**03**

**Moving at the speed of trust**

**04**

**Incorporating solidarity to create inclusionary spaces**

**05**

**Prioritizing the most impacted first**

**06**

**Developing supports for workers, families, and communities**

# Five Impact Areas



## Cutting Climate Pollution

Reducing emissions from transportation, buildings, energy and products.



## Capturing Carbon

Removing carbon from the air and storing it in soil or plants.



## Resilient Working and Natural Lands

Preparing farms, forests and ecosystems for climate change.



## Cross-Cutting Solutions

Investing in communities and workforce development.



## Vital Communities

Protecting people and infrastructure from climate impacts.

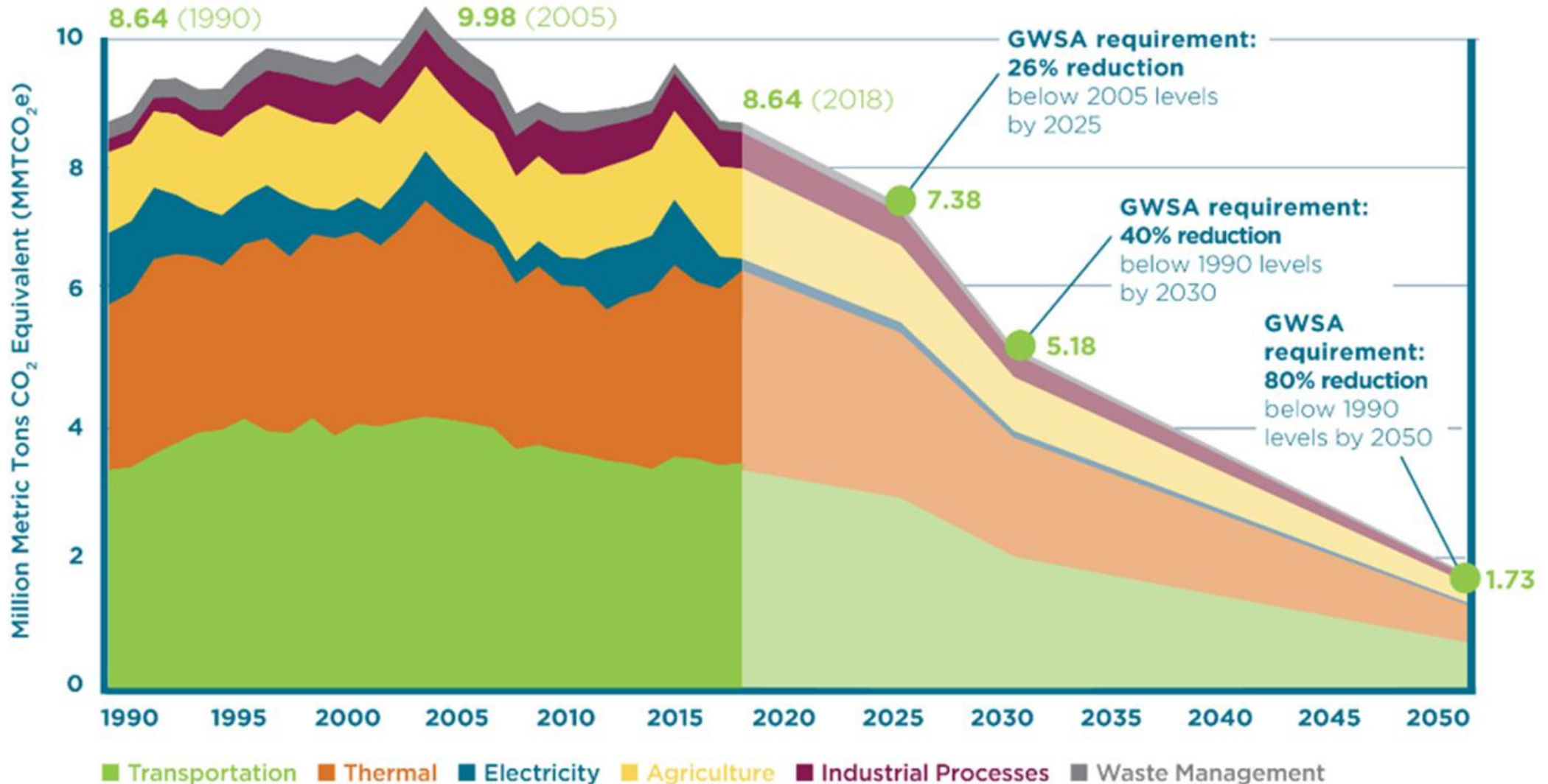




## **Cutting Climate Pollution**

Reducing emissions from transportation, buildings, energy and products.

# GWSA Emission Reduction Requirements



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

# Efficient Transit and Electric Vehicles

- Provide incentives to help Vermonters purchase electric vehicles
- Build more charging stations for electric vehicles
- Join the Transportation and Climate Initiative Program (TCI-P) when regional market viability exists\*\*
  - TCI-P would cap emissions from transportation fuel in the region and invest funds from the sale of carbon allowances to reduce emissions
  - *“As of the date of the adoption of this CAP, the future of the TCI-P is uncertain, and it is not immediately clear how Vermont’s adoption of the action to participate in the TCI-P would be implemented without partnership from other states in the region.”*
- Adopt California’s Advanced Clean Car and Clean Truck Rules
  - Requires manufacturers to sell an increasing number of zero-emission vehicles thru 2035.
  - Implemented thru ANR-led rulemaking
    - GWSA requires rules to be filed with ICAR by July 1, 2022

\*\* *non-consensus item*

# Efficient Transit and Electric Vehicles

- Electrify medium and heavy-duty vehicle auxiliary systems (i.e., bucket trucks and electric transport refrigeration units)
- Create infrastructure that supports more walking, biking, public transit options
- Educate drivers on benefits of electrification and other transportation options to reduce vehicle miles traveled (VMT)

# Efficient Transit and Low- and Zero-Emission Vehicles (ZEVs)

Transportation	2025	2030
Number of EVs ★	43,000	166,000
EV Share of Sales	40%	>80%
VMT Reduction from Baseline	1.9%	3.5%
EV share of VMTs	8%	29%
EV Managed Charging	27%	50%

★ Of the nearly 433,000 vehicles registered in Vermont (328,000 cars; 105,000 light-duty trucks), currently about 1% (<5,000) are ZEVs

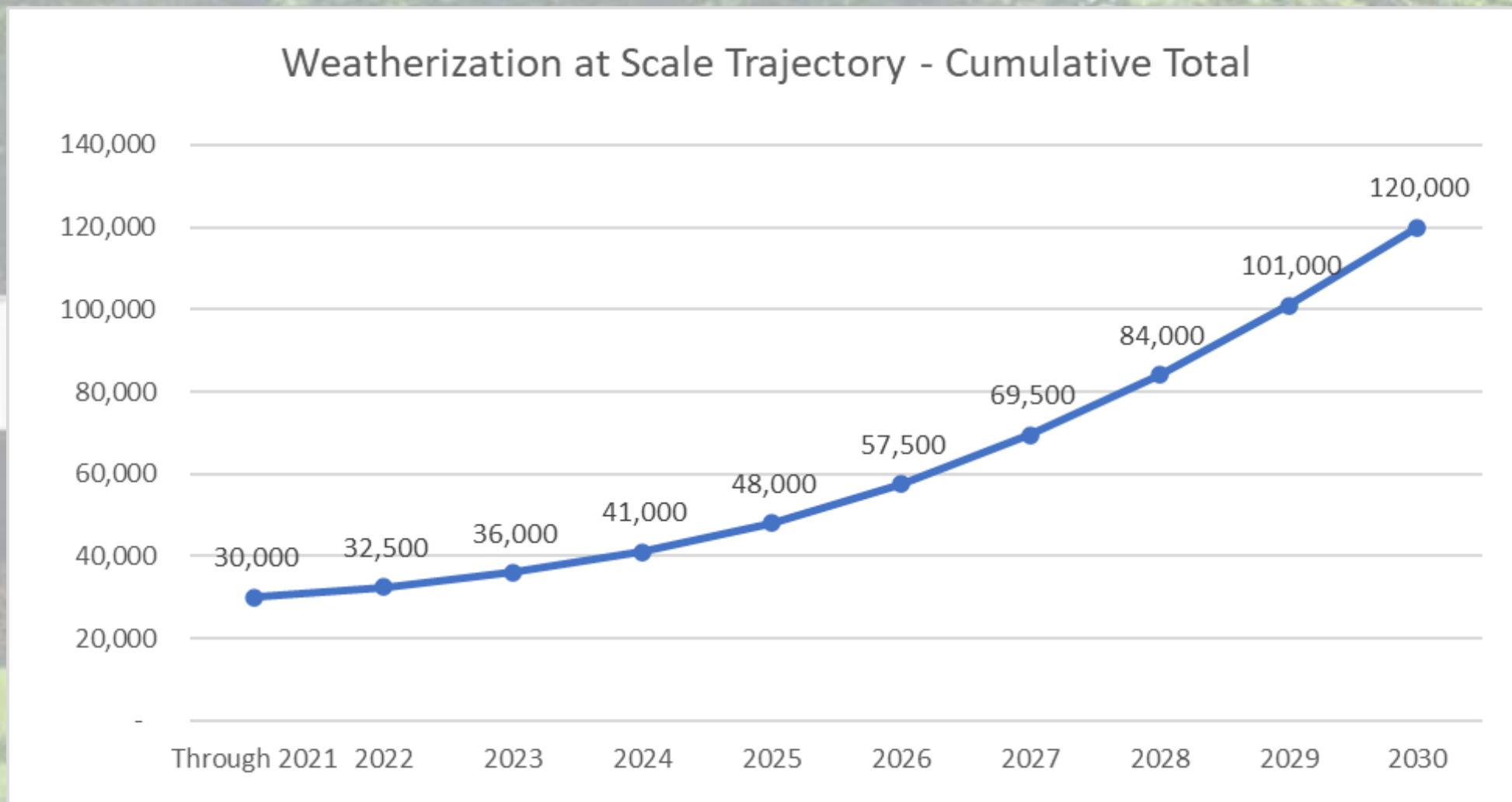
# Better Buildings and Homes

- Expand weatherization (“weatherization at scale”)
- Develop and implement a Clean Heat Standard
  - Performance standard driving transition to less carbon-intensive heating practices
- Incentivize adoption of clean, energy-efficient heating options, such as heat pumps and modern wood heat
- Institute a rental property efficiency standard (RPES)
- Regularly update and ensure compliance with the statewide residential building energy code

# Better Buildings and Homes

Residential	2025	2030
Homes Weatherized	48,000	120,000
Heat Pumps Installed	78,041	142,851
Heat Pump Water Heaters Installed	63,247	136,558
Homes with Biofuels	19,324	29,823

# Weatherization at Scale

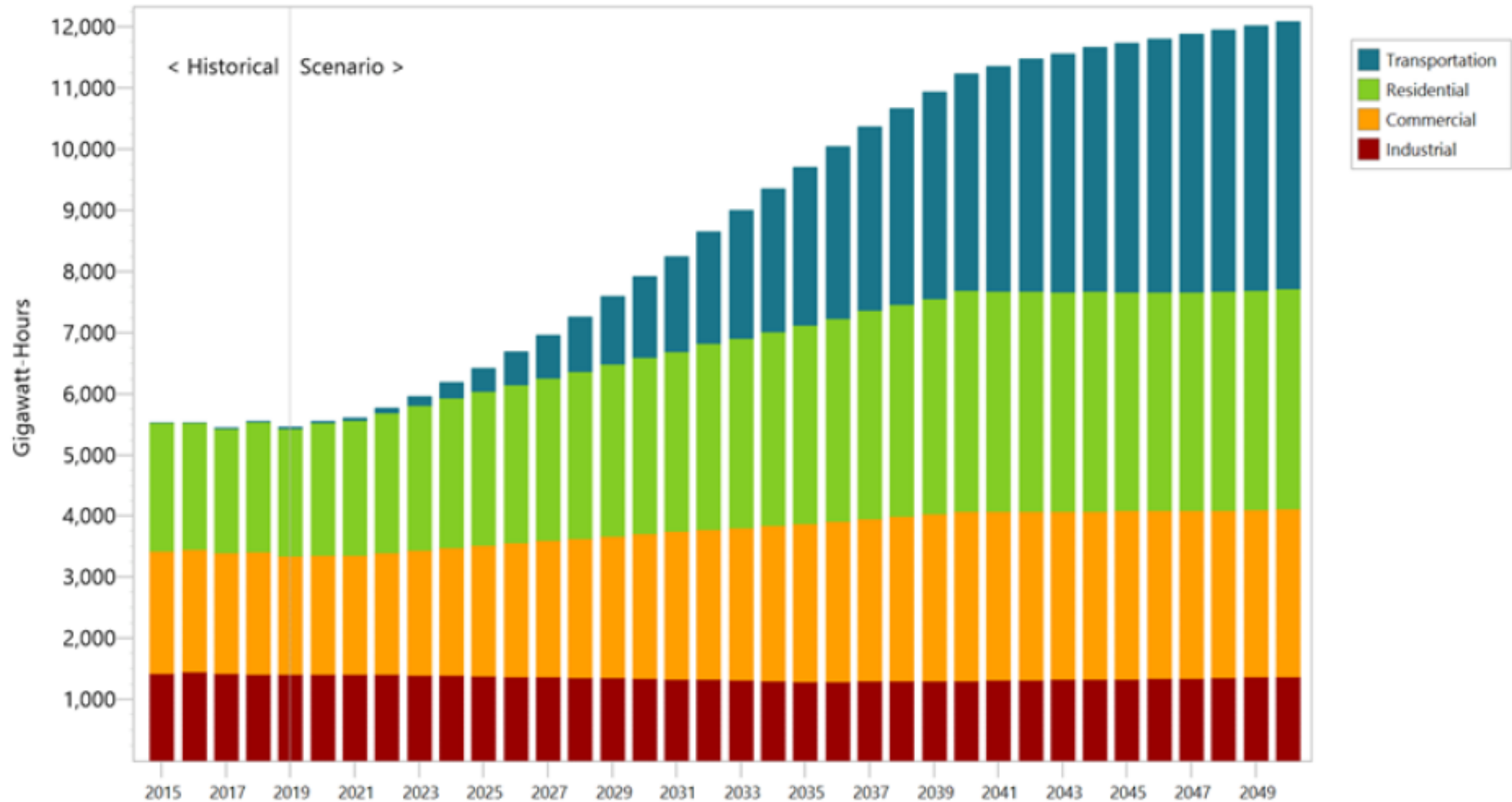




# Clean, Reliable Energy

- Shift away from fossil fuels and fossil fuel-dependent equipment
- Pursue 100% Carbon-free or renewable electricity by 2030
  - Up from current goal of 75% by 2032
  - Total demand for electricity is expected to double from roughly 5.5 TWh in 2020 to more than 12 TWh by 2050
- Enable all Vermonters to choose electrification
  - Upgrade electrical service in homes/businesses
- Invest in load management and grid optimization

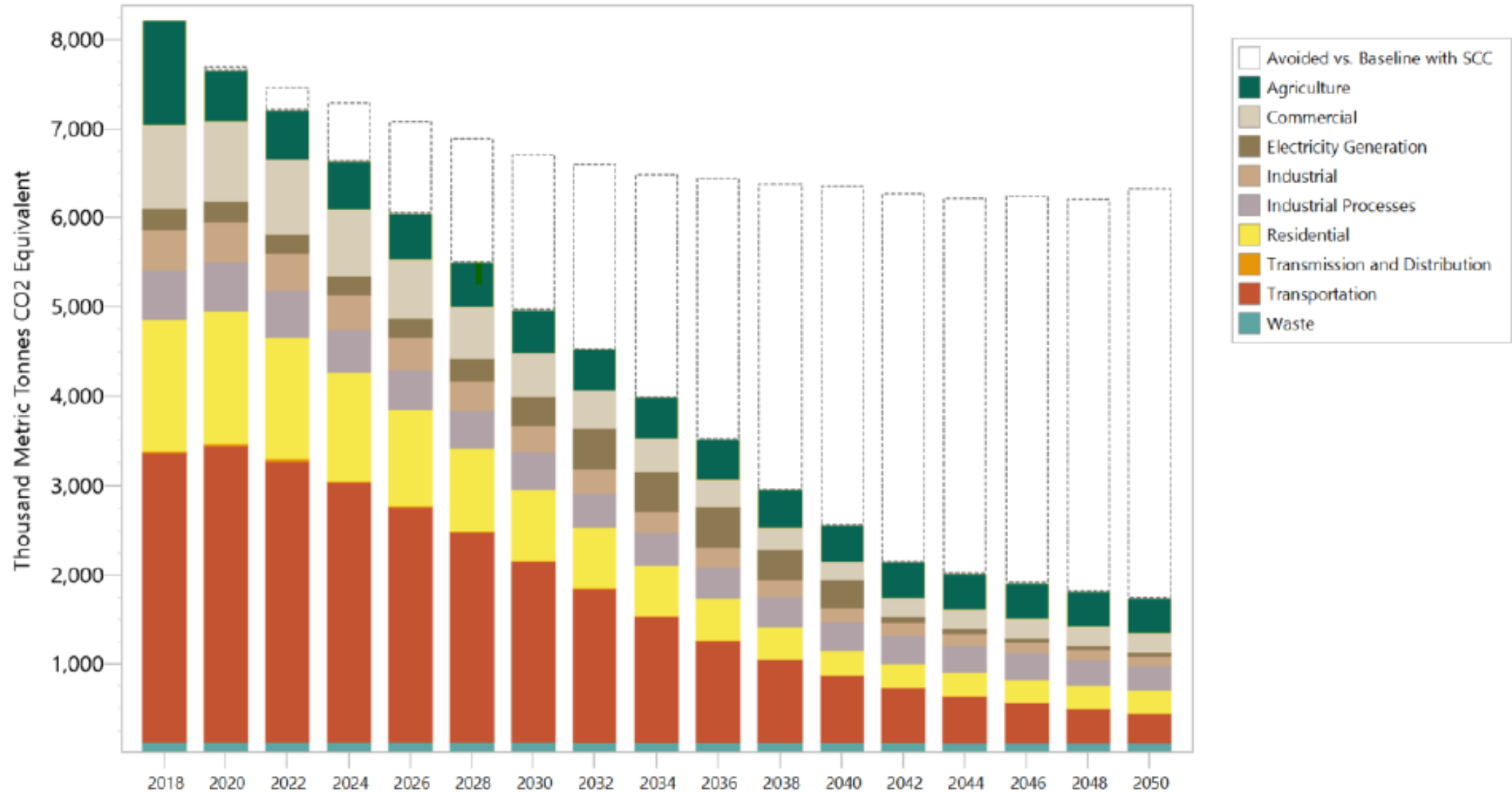
# Modeled Electricity Demand in Vermont, thru 2050



# Other Greenhouse Gas Reduction Opportunities

- Improve manure management and implement methane capture on farms
- Reduce emissions of refrigerants with high global-warming potential
- Reduce emissions of fluorinated gases from semiconductor manufacturing
- Ensure flares are operational at all existing municipal wastewater digesters

# GWSA Requires Aggressive Scale and Pace





## **Cross-Cutting Solutions**

Investing in  
communities and  
workforce development.

# Cross-Cutting Solutions

- Support compact settlement patterns
  - Infrastructure investments, tax incentives
  - Regulatory changes (Act 250, designated centers, local zoning)
  - No net loss of natural or working lands \*\*
  - State land-use policy/plan \*\*
- Ensure state government, community and partner capacity needed to support implementation
- Establish statewide environmental justice policy
- Expand training and resources for workforce development
- Launch comprehensive climate education programs
- Encourage personal actions

**\*\* non-consensus items**

# With the CAP Adopted, What Happens Now?

## **Vermont Climate Council (Cross-Sector Mitigation Priorities Bolded)**

- Continue to meet monthly (Next meeting January 24)
- **Develop strategies for transportation sector GHG emissions reductions**
- **Explore tabled biomass recommendations with a subset of the Agriculture and Ecosystems and Cross-Sector Mitigation Subcommittees**
- Make recommendations for utilization of ARPA funds to Legislature and the Governor (Sent to Legislature and Governor 12/30/21)
- Request budget to support further technical analyses/study
- Prioritize work needed to build equity into climate action and ensure a just transition (including robust public engagement strategy)

*It is essential to extend the VCC's commitment to co-creation of and broad-based public engagement in building out the policies and programs needed to implement the CAP*

# With the CAP Adopted, What Happens Now?

## **ANR**

- Complete Vermont Pathways Analysis Report
- Initiate rulemaking re: CA Clean Car & Truck standards
- Develop Measuring Progress Reporting Tool
- Develop the Municipal Vulnerability Index Tool
- Oversee Components of Public Engagement Strategy for Initial Climate Action Plan including translation of CAP and online meetings

## **JFO**

- Prepare “...an analysis of the economic, budgetary, and fiscal costs and benefits of the Plan...”



# With the CAP Adopted, What Happens Now?

## Legislature

- Activity largely moves back into the Legislature to:
  - Identify a suite of high-impact policy priorities that will support durable environmental outcomes
    - Weigh investments in GHG emissions reductions against the tangible steps to lessen the effects of climate change on Vermonters
  - Fully appropriate ARPA funds for climate action
    - Identify opportunities to utilize one-time monies to augment federal funds to achieve the speed and scale of implementation actions required by the GWSA
  - Understand additional analyses and contractor support needed to fully achieve the requirements of the GWSA, including:
    - Advancing improvements to the emissions inventory and carbon budget
    - Establishing an approach for data collection and management to track progress
    - Creating a municipal climate toolkit, including vulnerability index
    - Continuing and expanded public outreach and engagement
  - Ensure diverse appointments to the Council as vacancies arise, and support those appointees with just compensation