Meeting of the Governor's Council on Climate Change Equity & Environmental Justice Working Group

February 25, 2020
5:30 p.m. – 8:00 p.m.
New Haven, CT

Agenda

5:30 p.m.	**Welcome and introductions**
5:40 p.m.	**Workgroup objectives**
5:50 p.m.	**Summary of Climate Change in CT and 2018 GC3 Report**
6:10 p.m.	**Discussion on draft definition of equity**
6:25 p.m.	**Break out groups**
7:00 p.m.	**Report out/full group discussion**

Executive Order 3 Overview

Executive Order 3 Objectives

The Council is tasked with two primary objectives and related tasks:

1. Monitor and report on the state's implementation of the greenhouse gas emissions reduction strategies set forth in the GC3's December 2018 recommendations report. This includes tasks such as:

   - evaluating **opportunities for equitably distributing the costs and benefits of implementing** the recommended GHG mitigation strategies, specifically addressing any disproportionate impact on environmental communities;
   - assessing and describing how GHG reduction strategies are being **integrated into existing and new state agency planning efforts**;
   - evaluating the **efficacy of existing and proposed policies and regulations** aimed at reducing GHG emissions; and
   - identifying new and emerging GHG mitigation strategies that **maximize climate change adaptation and resiliency.**

Executive Order 3 Objectives

2. Develop and implement adaptation strategies to assess and prepare for the impacts of climate change in areas such as infrastructure, agriculture, natural resources, and public health. This includes tasks such as:
   - conducting an **inventory of vulnerable assets and operations**;
   - revising and updating the statewide **Adaptation and Resilience Plan**; and
   - reporting on the **alignment of climate change adaptation** strategies incorporated into **state agency planning processes and documents**.

To achieve these objectives and associated tasks the Council may establish subcommittees and working groups including, but not limited to, a **Climate Change Mitigation Subcommittee** and **Climate Change Adaptation and Resiliency Subcommittee**.

Deliverables

January 15, 2021 report to the Governor the state's progress on the implementation of the recommendations outlined in the report *Building a Low Carbon Future for CT: Achieving a 45% reduction by 2030;*

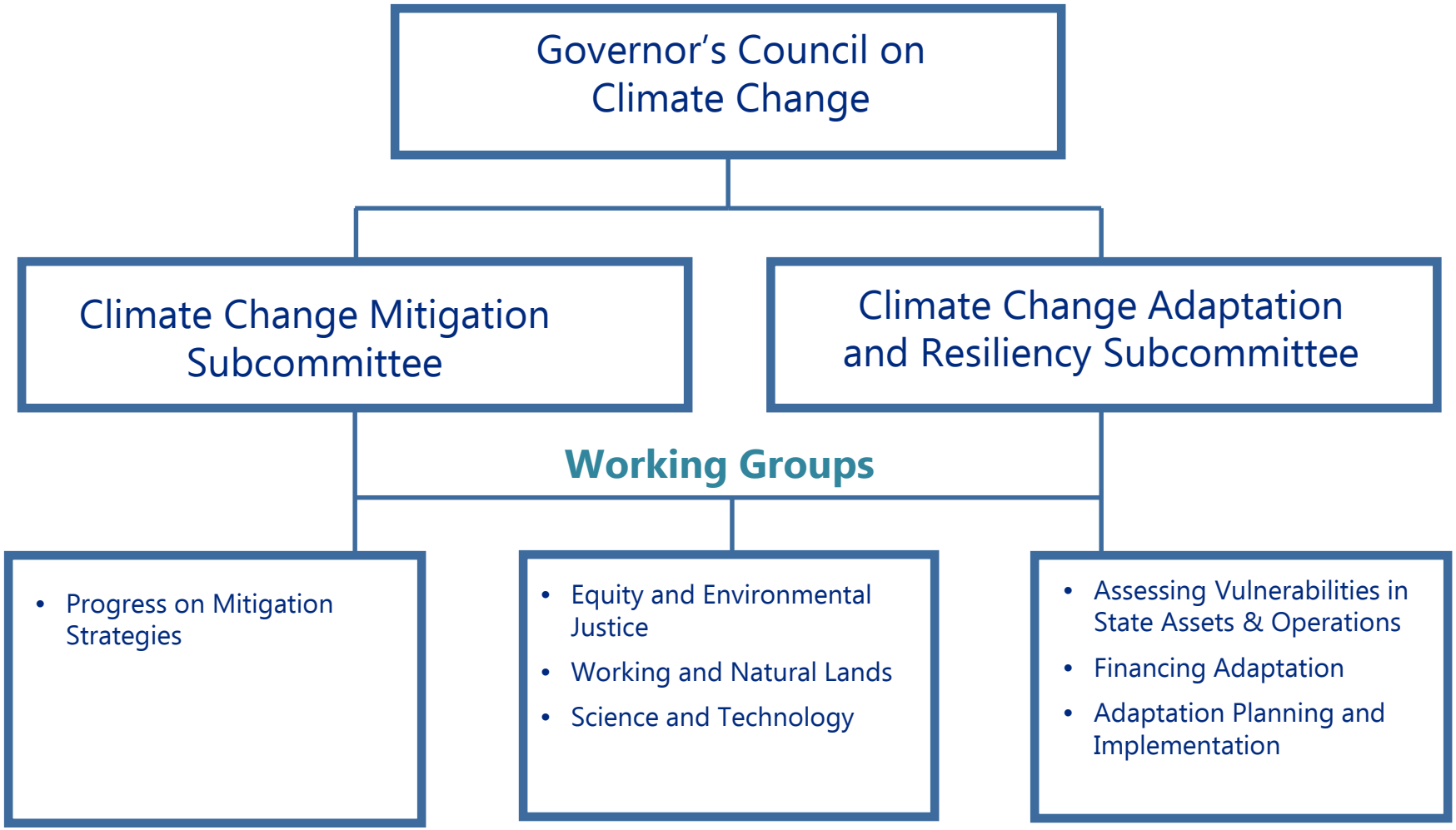
Establish a framework, in consultation with the state's Chief Data Officer and in coordination with CIRCA's ongoing vulnerability assessment, for state agencies to compile and maintain an inventory of vulnerable assets and operations

January 15, 2021, report to the Governor on a revised statewide Adaptation and Resilience Plan for Connecticut that encompasses the most current and locally scaled scientific information and analysis available with respect to the effects of climate change, including sea level rise, changes in precipitation and temperature patterns, and storm preparedness in the context of the State's changing land use and demographics.

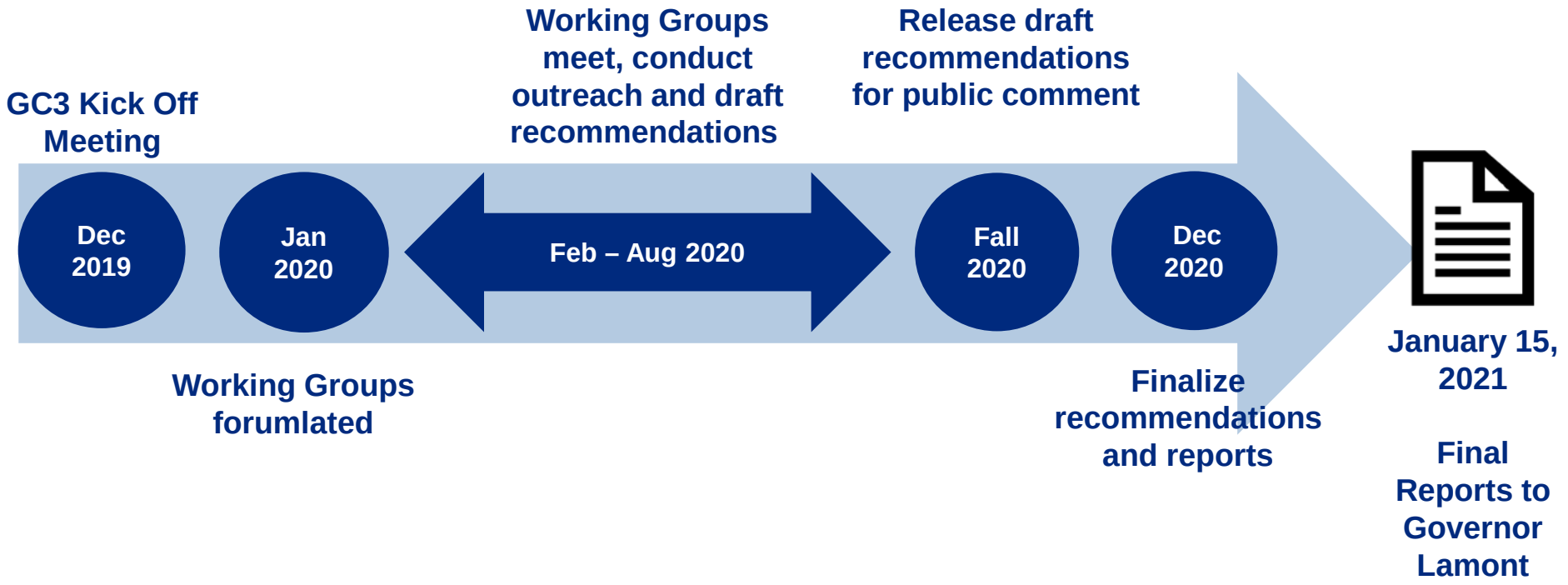
December 31, 2021, compile a comprehensive State Agency Climate Change Adaptation and Resiliency report on the alignment of climate change adaptation strategies incorporated into each state agency's relevant planning processes and documents

Governor's Council on Climate Change (GC3) Overview

GC3 Structure



Timeline


GC3 Kick Off Meeting
Working Groups meet, conduct outreach and draft recommendations
Release draft recommendations for public comment
Dec 2019
Jan 2020
Feb – Aug 2020
Fall 2020
Dec 2020
January 15, 2021
Working Groups forumlated
Finalize recommendations and reports
Final Reports to Governor Lamont

Working Groups

- Equity and Environmental Justice
- Working and Natural Lands
- Science and Technology
- Assessing Vulnerabilities in State Assets and Operations
- Financing Adaptation
- Adaptation Planning and Implementation
- Progress on Mitigation Strategies

Working Groups

- **Equity and Environmental Justice**

Develop a robust stakeholder engagement process to ensure that the communities most vulnerable to and disproportionately impacted by climate change have the opportunity to meaningfully participate in the development of climate change mitigation and adaptation strategies that meet their needs and achieve equitable solutions.

Working Groups

- **Working and Natural Lands**

Evaluate the role of nature-based solutions (e.g., scaling up the preservation and restoration of forests and coastal wetlands, green and natural infrastructure, agricultural lands) in climate change mitigation and adaptation and how to best incorporate the economic, social, and environmental co-benefits of these solutions into Connecticut's climate change planning strategies.

Working Groups

- **Science and Technology**

Provide scientific and technical support to GC3 and subcommittees and assist with translating climate modeling and data into actionable, downscaled information that can be used to incorporate climate change into planning processes.

Working Groups

- **Assessing Vulnerabilities in State Assets and Operations**

  Assist in development of a framework for state agencies to complete an inventory of vulnerable assets and operations, including defining vulnerability criteria, risk parameters, and relevant climate hazards for analysis.

Working Groups

Identify innovative and practical options to finance climate adaptation and mechanisms to scale investment in the broad spectrum of climate resilience strategies and solutions.

- **Financing Adaptation**

Working Groups

Review and update the 2011 Climate Change Adaptation/Preparedness Plan to include the most current and locally-scaled scientific information and analyses available and provide updated recommendations for adapting to and improving the state's resilience to climate change.

- **Adaptation Planning and Implementation**

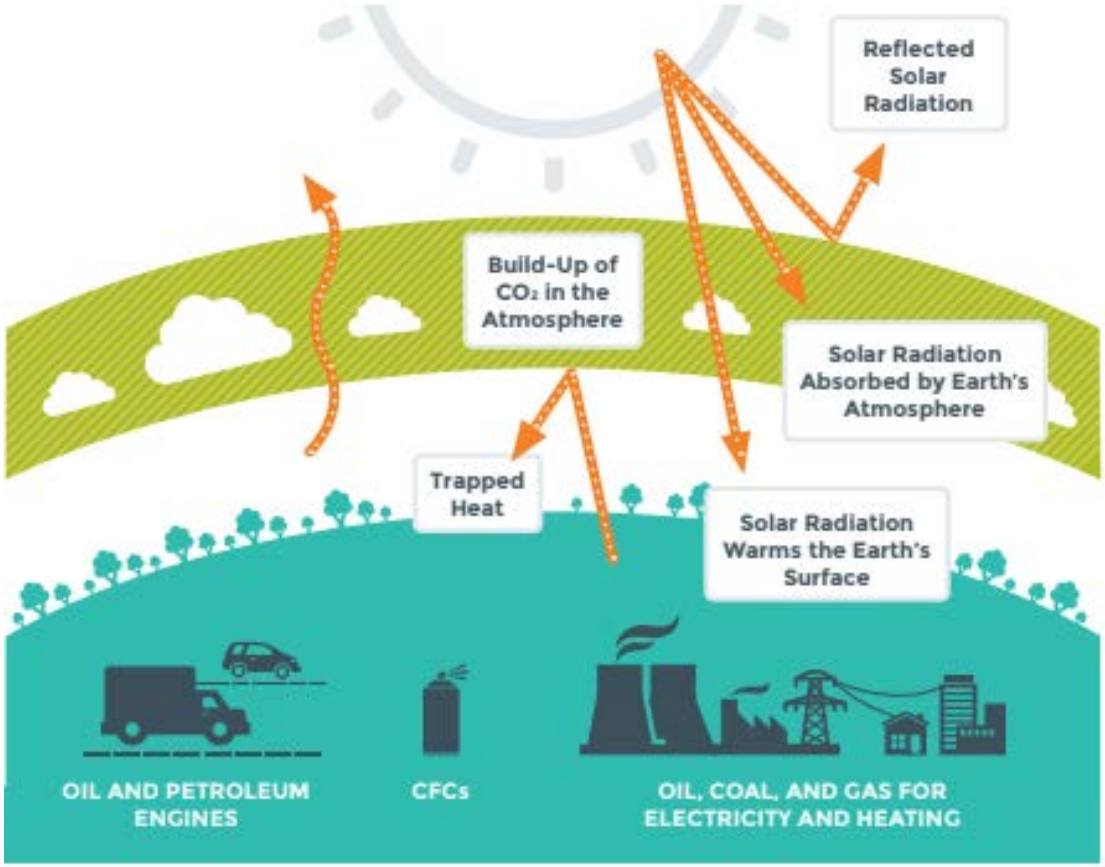
Working Groups

Review and evaluate progress in implementing the recommendations outlined in the 2018 GC3 report, Building a Low Carbon Future for Connecticut: Achieving a 45% GHG Reduction by 2030. Assess how recommended strategies are integrated into existing and new policy planning efforts, evaluate the efficacy of existing and proposed policies at reducing GHG emissions, and prioritize the equitable distribution of costs and benefits of climate change mitigation.

- **Progress on Mitigation Strategies**

What is Climate Change?

Greenhouse Gas Effect



A build-up of CO_2 in the atmosphere causes heat to be trapped in the Earth's atmosphere, instead of escaping.

Source: Greenovate Boston, 2014 Climate Action Plan.

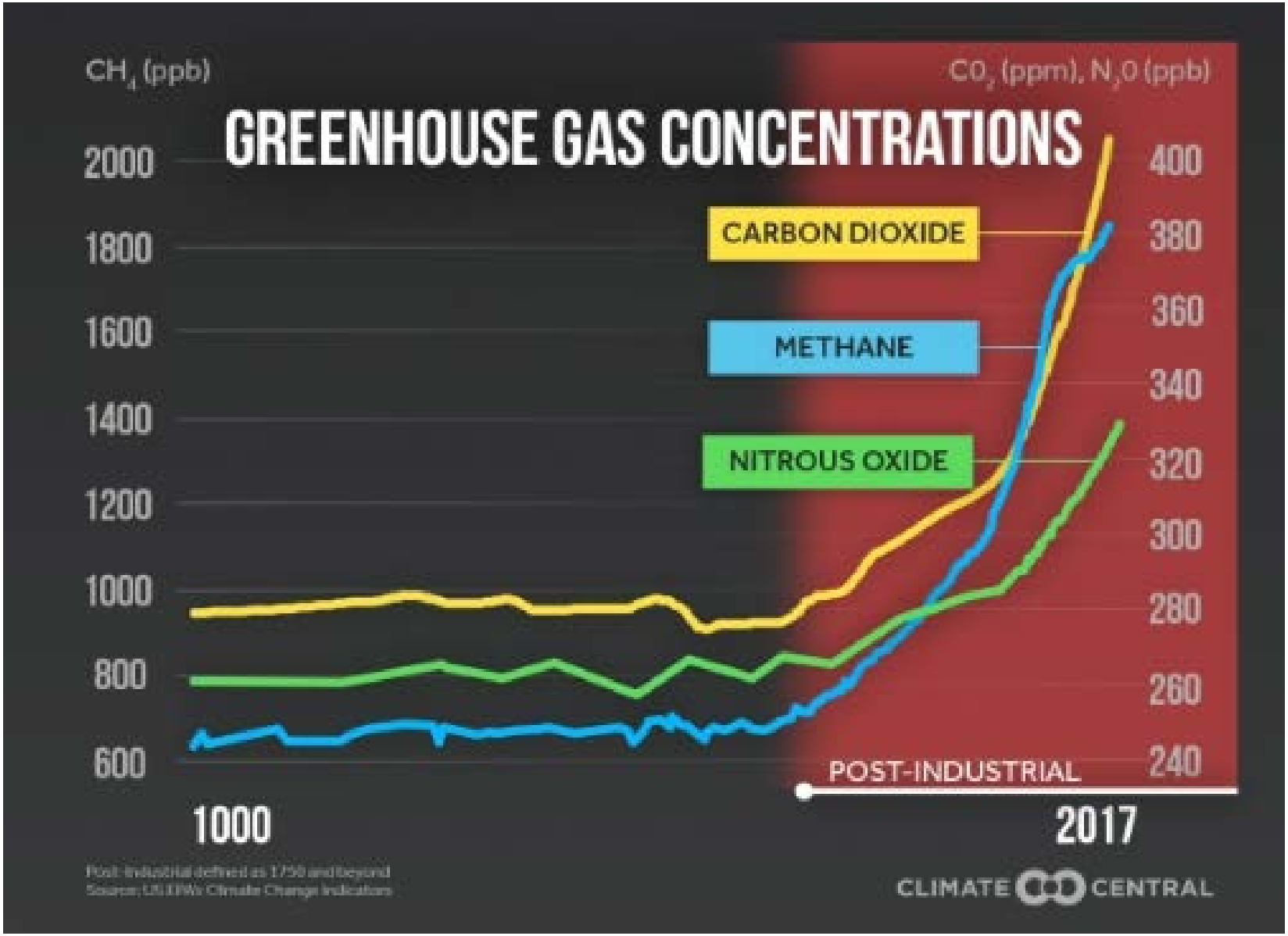
The greenhouse effect refers to the capability of some gases in the atmosphere to absorb heat energy from the sun. These gases, collectively known as "greenhouse gases," include CO2, methane, and chlorofluorocarbons. Carbon dioxide represents the greatest warming potential due to its atmospheric abundance. When the concentration of GHGs in the atmosphere increases, more heat energy from the sun becomes trapped in the atmosphere rather than radiating back into space, thus heating the Earth system.

What We Know: the Reality, Risks, and Response to Climate Change

Climate scientists agree: climate change is happening here and now. Based on well- established evidence, about 97% of climate scientists have concluded that human-caused climate change is happening. This agreement is documented … by a converging stream of evidence over the past two decades from surveys of scientists, content analyses of peer-reviewed studies, and public statements issued by virtually every membership organization of experts in this field. Average global temperature has increased by about 1.4˚ F over the last 100 years. Sea level is rising, and some types of extreme weather events – such as heat waves and heavy precipitation events – are happening more frequently. Recent scientific findings indicate that climate change is likely responsible for the increase in the intensity of many of these events.

AAAS 2014

Rising GHG Concentrations



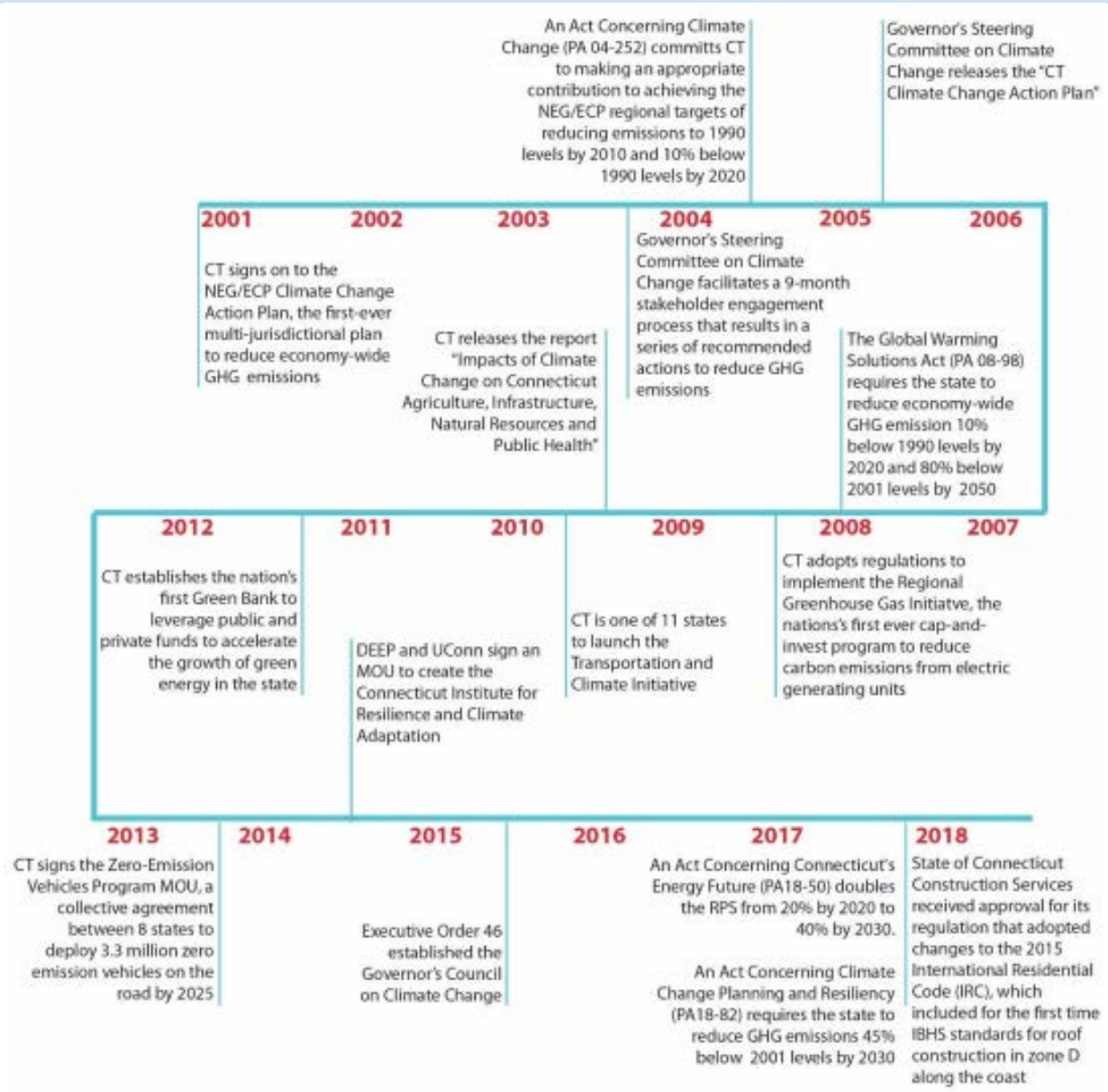
Climate Change Impacts in Connecticut

- In conservative estimates, climate projections for Connecticut robustly indicate that annual mean temperature will rise by 3-6°C (5.4-10.8°F) by the end of the 21st century.
- Sea level rise along the Connecticut coast is projected to be as high as 20 inches (approximately 0.5 meters) by 2050.
- Summer temperatures will rise, decreasing air quality and electricity generation deficiencies will potentially increase electric prices.
- Higher emissions in winter due to temperature extremes resulting from increase in the use of distillate oil and coal.
- Extreme weather events cause greater flooding, downed power lines, infrastructure damage, etc.
- More intense hurricanes, in conjunction with projected sea level rise, could lead to increase in storm surge and longer hurricane season.

Climate Change Action in Connecticut

Progress to Date

Taking Action on Climate Change in CT

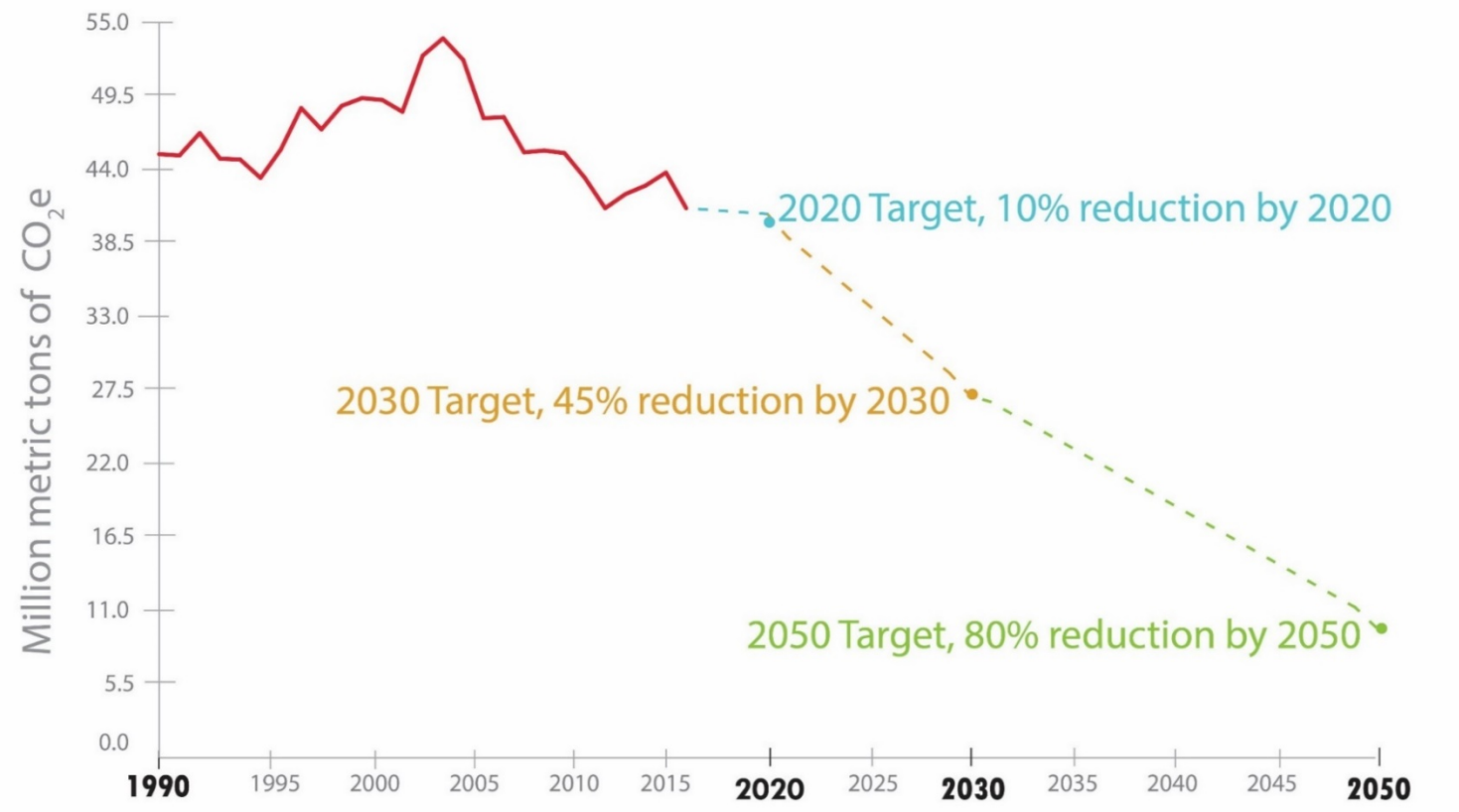


Tracking CT's GHG Reductions

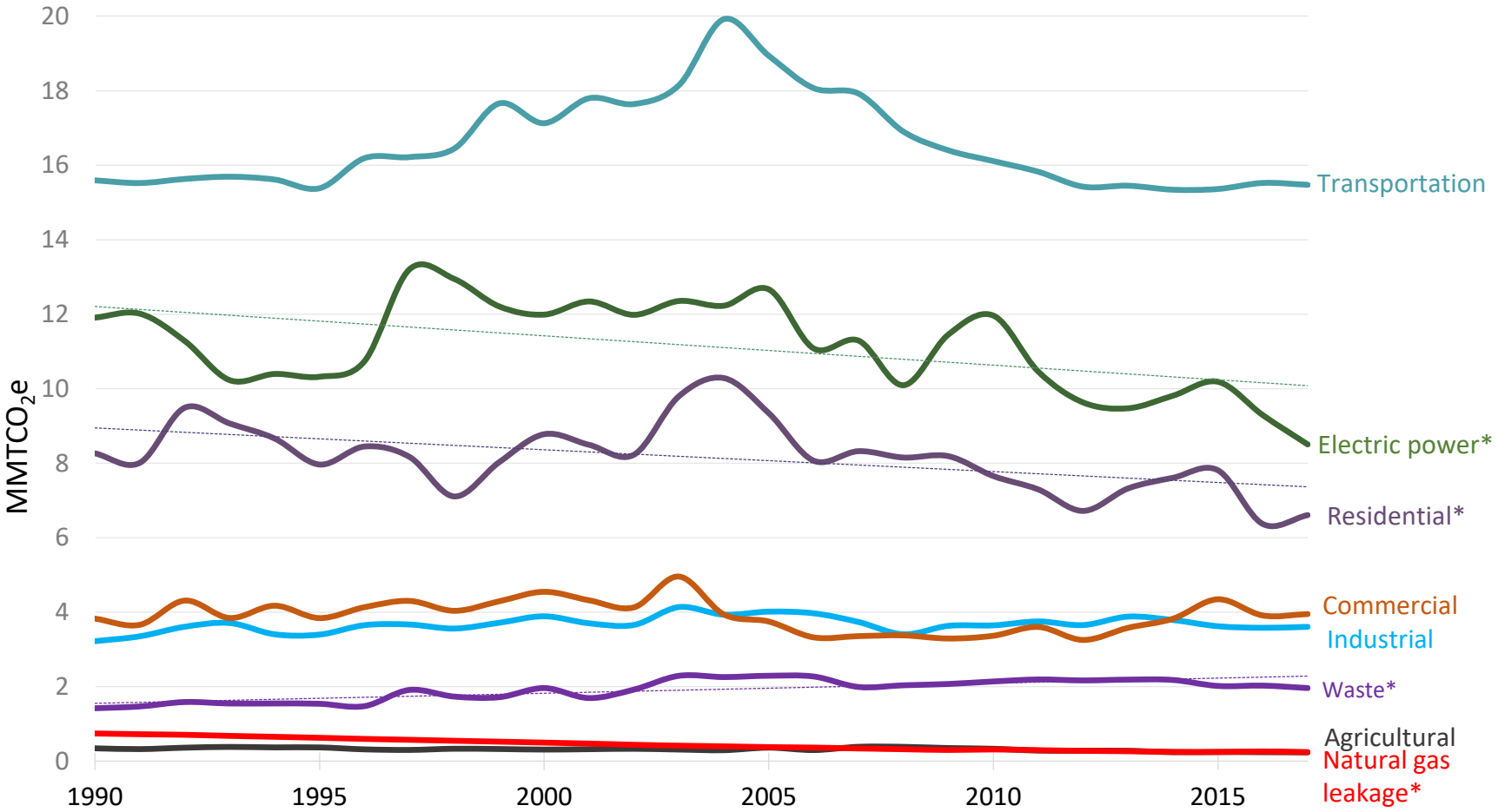
Chapter 446c, Sec. Sec. 22a-200a. Reduction of greenhouse gas emissions: Mandated levels.

(a) The state shall reduce the level of emissions of greenhouse gas:

- ✓ Not later than January 1, 2020, to a level at least 10% below the level emitted in 1990
- ✓ Not later than January 1, 2030, to a level at least 45% below the level emitted in 2001
- ✓ Not later than January 1, 2050, to a level at least 80% below the level emitted in 2001

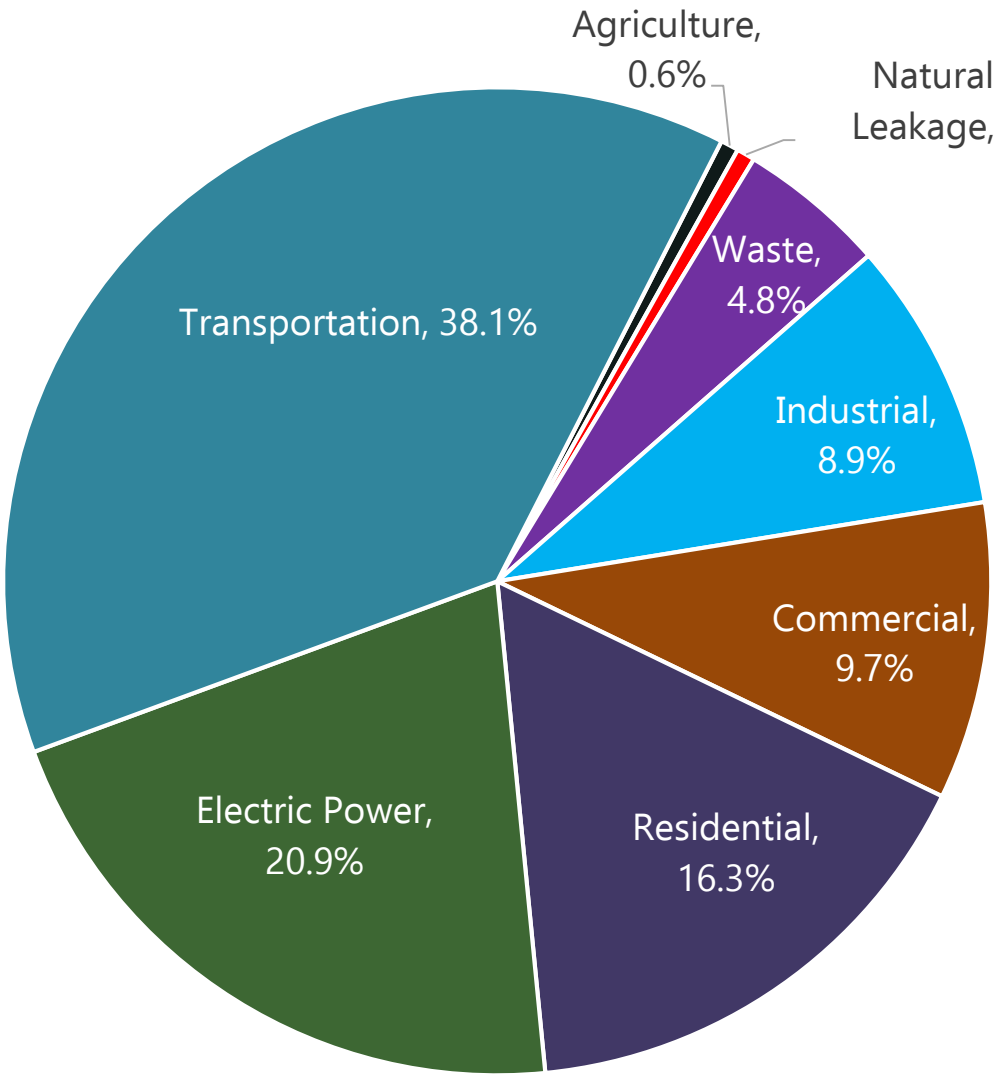


Connecticut Annual GHG Emissions by Sector, 1990-2017



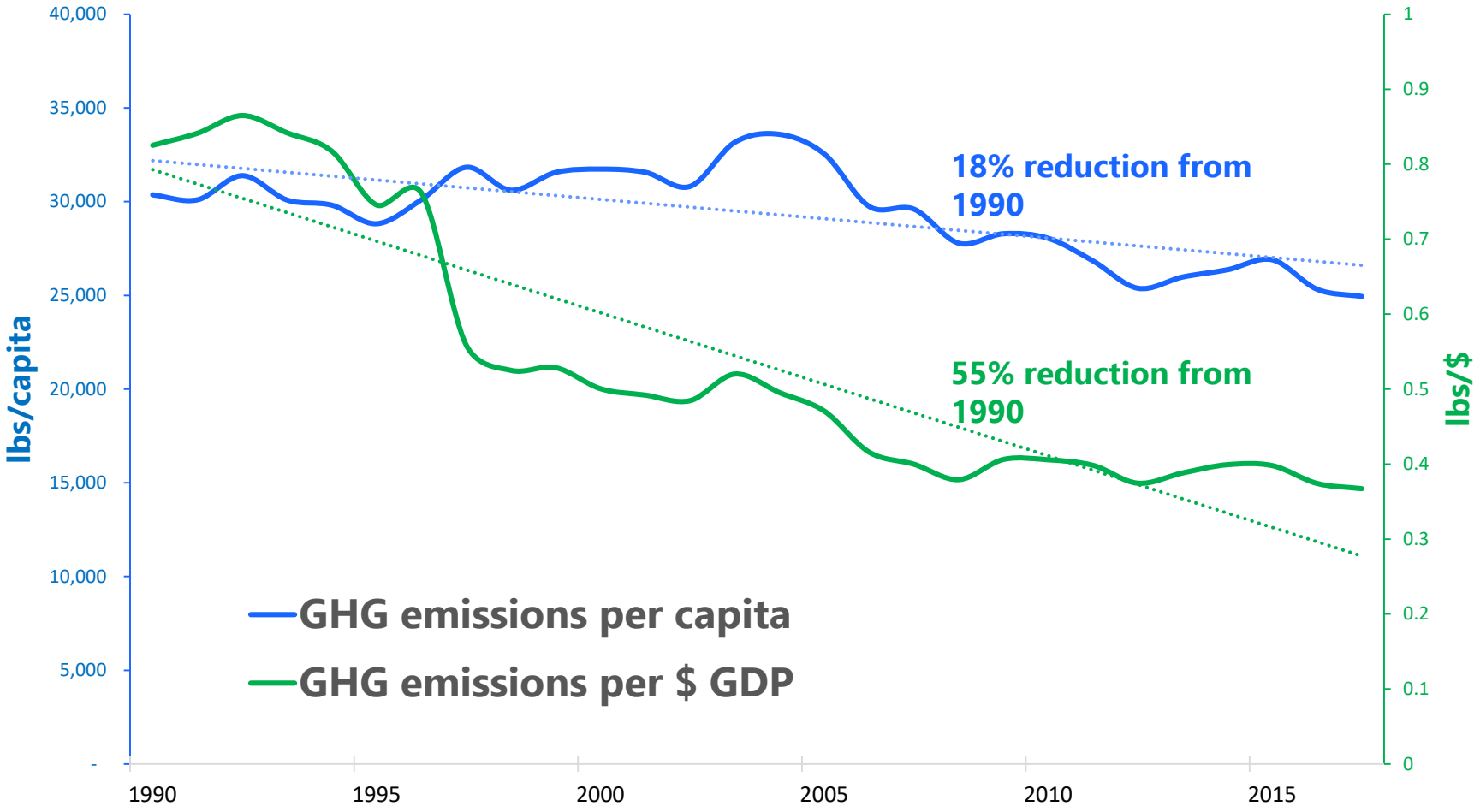
- Transportation Sector dominant source of GHG emissions: 38.1% of economy-wide emissions
- 2017 Electric Power, Agricultural, Natural Gas Leakage, & Waste Sectors down from 2016

Sectoral Emissions



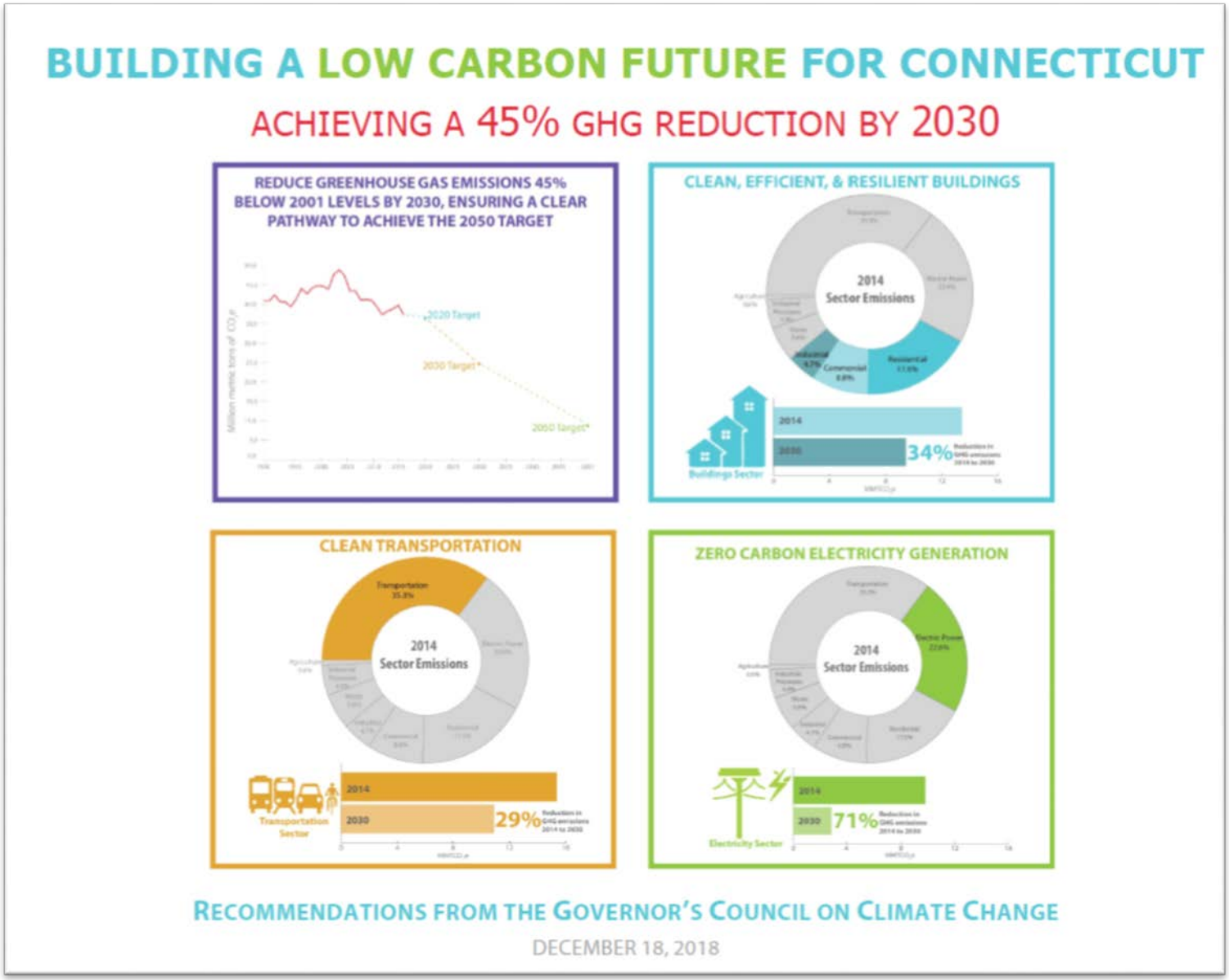
	% change from 1990	% change from 2001	% change from 2016
Agriculture	-31%	-26%	-2%
Natural Gas Leakage	-68%	-49%	-7%
Commercial	3%	-9%	1%
Electric Power	-29%	-31%	-8%
Industrial	12%	-3%	1%
Residential	-20%	-22%	4%
Transportation	-0.8%	-13%	0%
Waste	38%	16%	-3%
Total Emissions	-10.5%	-17.4%	-2%

GHG Emissions per Capita and GDP

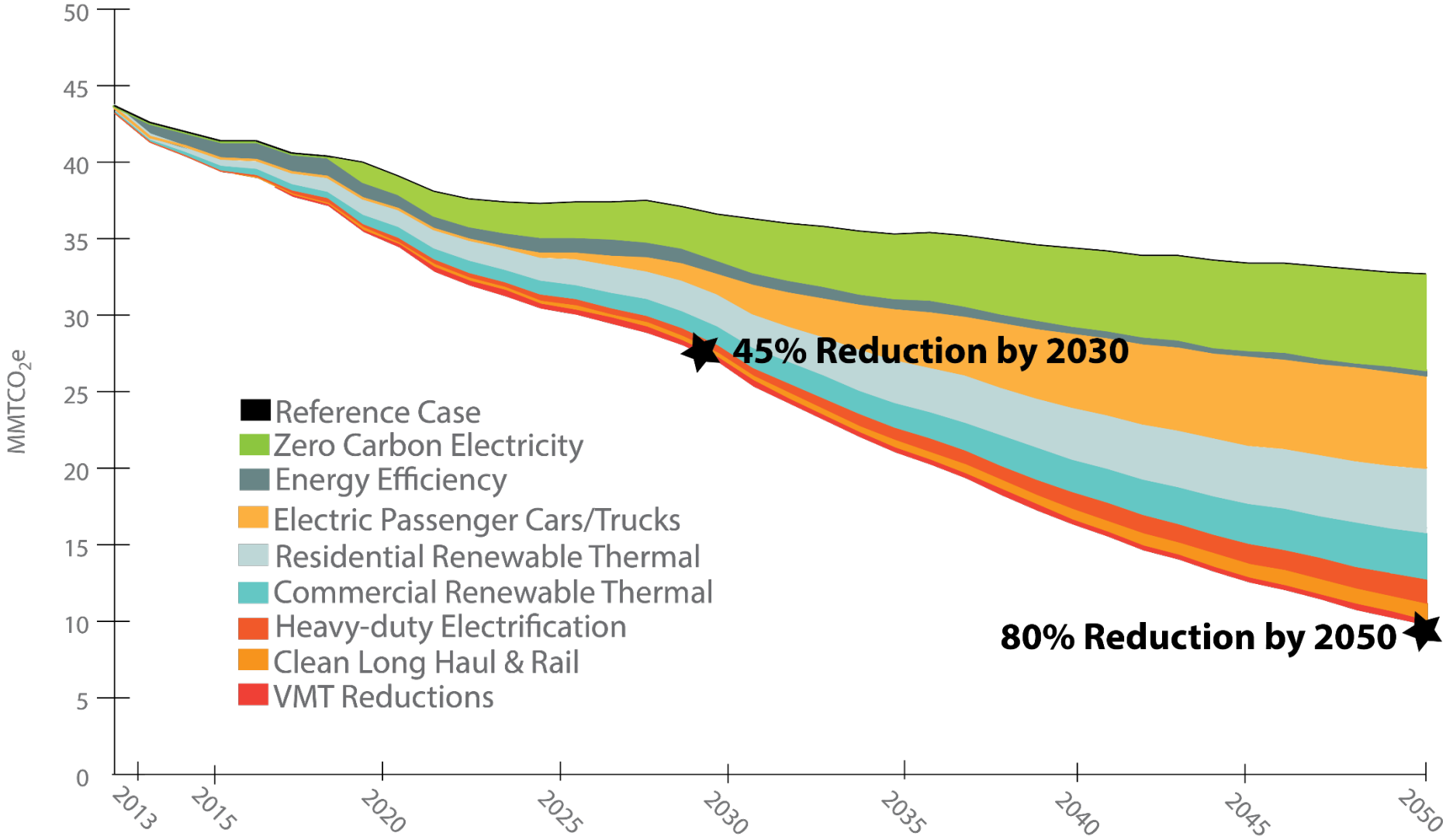


US = **35 lbs/capita**; CT = **25 lbs/capita** (28% lower than US average)
US = **0.73 lbs/$**; CT = **0.37 lbs/$** (49% lower than US average)

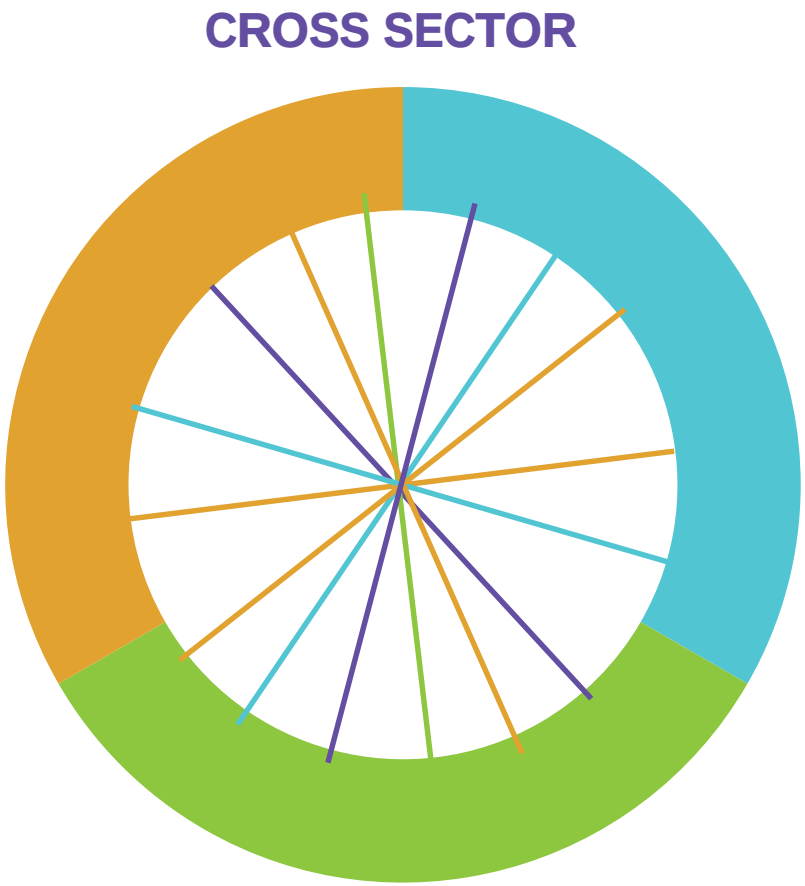
GHG Reduction Strategies and Recommendations



GHG Reduction Pathway Analysis

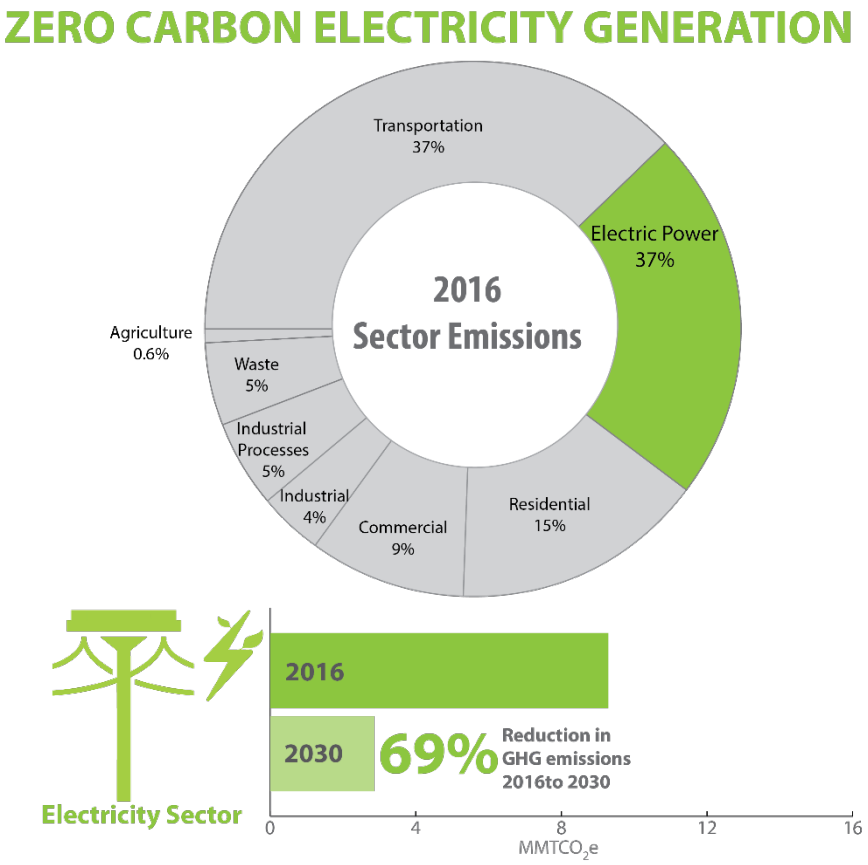


Cross Sector Recommendations



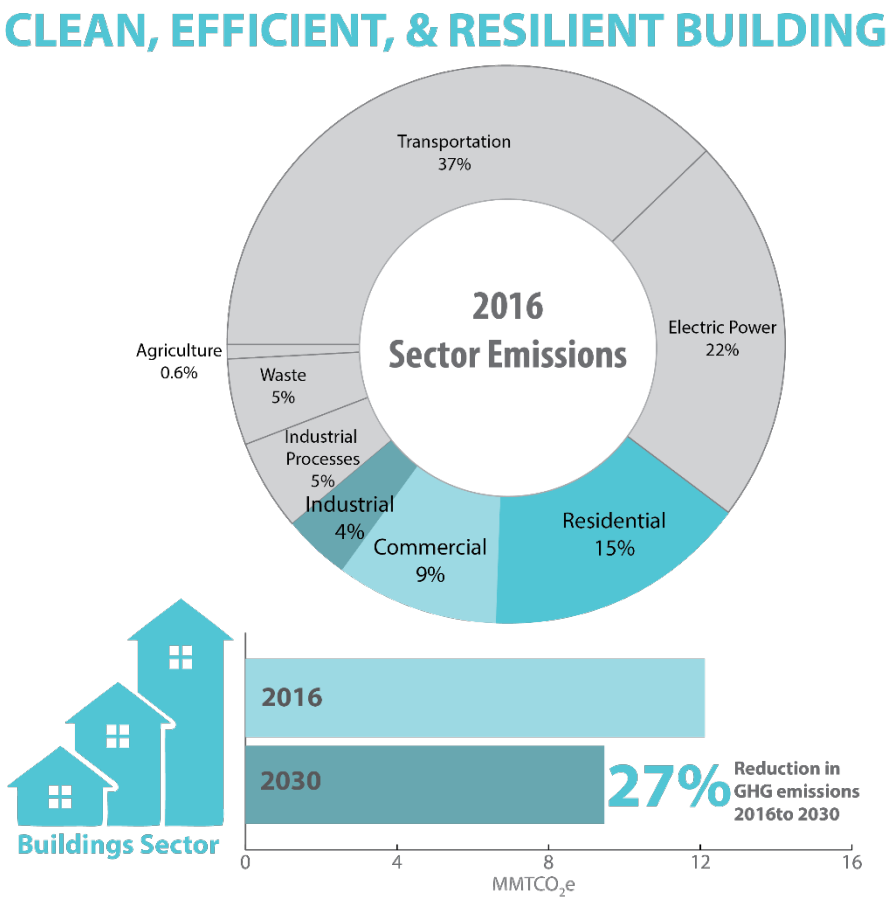
- Put a price on carbon
- Expand consumer education and awareness efforts to increase the uptake of zero- and low-carbon technology and resiliency measures
- Pursuing an integrated approach to GHG mitigation, adaptation and resiliency

Electric Sector Recommendations



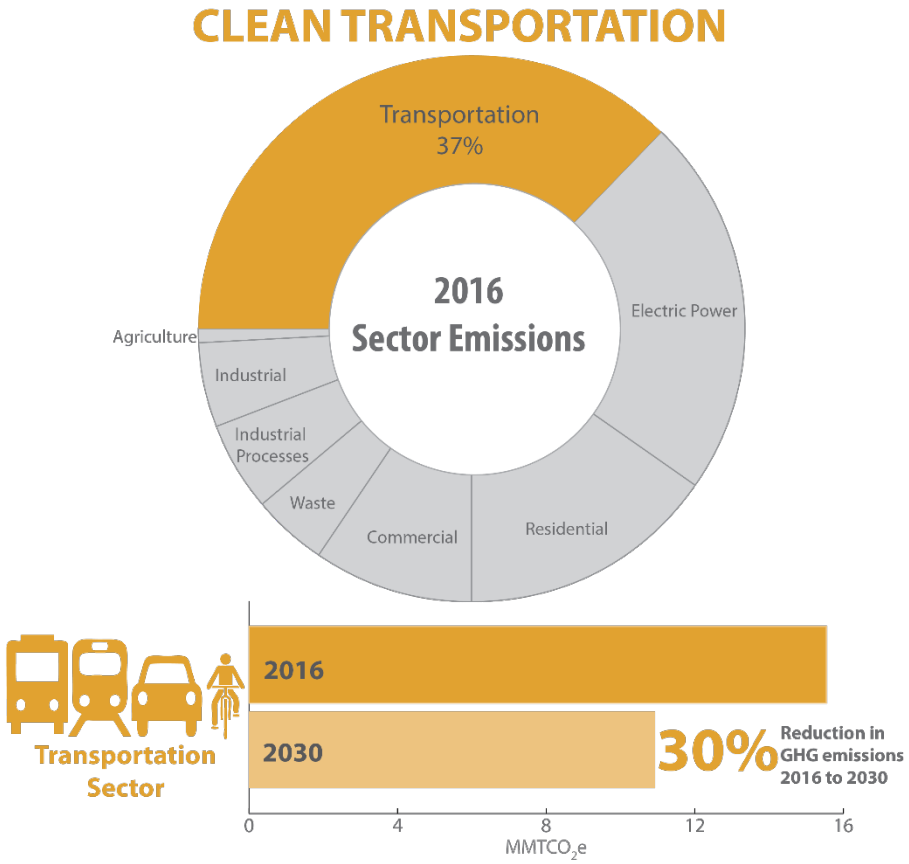
- Commit at least 50 megawatts of demand reduction per year to the ISO New England forward-capacity market
- Achieve at least 66% zero-carbon energy generation by 2030
- Optimize grid-management strategies to reduce carbon emissions

Buildings Sector Recommendations



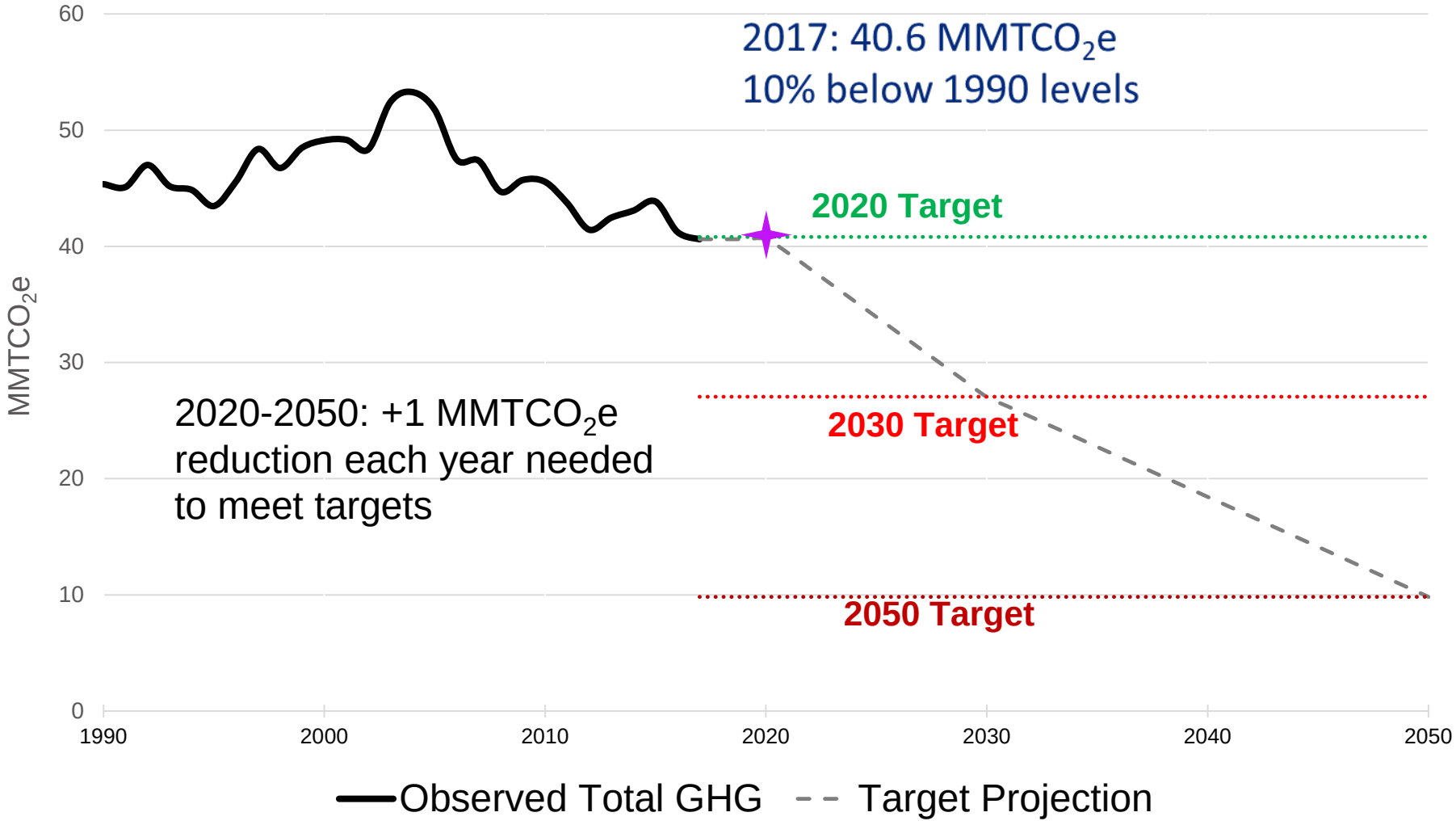
- Accelerate adoption of building thermal energy conservation
- Transition building fossil fuel thermal loads to efficient renewable thermal technologies
- Improve training and technical capacity of workforce

Transportation Sector Recommendations



- Maintain increasing fuel economy and low- and zero-emission standards
- Increase light-duty ZEV penetration rate to at least 20% by 2030
- Advance initiatives that eliminate the rate of annual VMT growth by 2030
- Develop sustainable funding for transportation electrification and transportation infrastructure

Connecticut's 2017 GHG Inventory



Public Comments

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