



Connecticut Climate Action Plan

The Connecticut Department of Energy and Environmental Protection (DEEP) is developing a Climate Action Plan (CAP) to assess potential pathways for Connecticut to meet its economy-wide greenhouse gas (GHG) emission reduction goals through 2050. The CAP is being developed under the Climate Pollution Reduction Grant (CPRG) Program with funding from the U.S. Environmental Protection Agency (EPA) and in coordination with stakeholders and the public. The CAP will serve as a roadmap, outlining specific measures and implementation actions that Connecticut can pursue to achieve its emission reduction goals, provide cost savings, and increase community resilience.



Emissions 45% below 2001 levels

Emissions 65% below 2001 levels and zero-carbon electricity supply

Emissions 80% below 2001 levels and economy-wide net-zero emissions

- A **GHG reduction measure** is a specific, tangible initiative to reduce emissions.
- An **implementation action** is an activity to implement a measure and realize the associated emission reductions and benefits.

The CAP outlines potential emission reduction measures for seven sectors. For each measure, it will quantify the emission reduction potential and identify any key considerations for implementation, including co-benefits, costs, authority to implement, and workforce needs.

The following CAP sector¹ profiles provide an overview of each sector’s historical and projected GHG emissions in million metric tons of CO₂ equivalent (MMTCO₂e) through 2050 under a business-as-usual (BAU) scenario, the GHG reduction measures identified for the sector, and example implementation actions for each measure. The BAU projections are preliminary as of December 2025 and subject to change as DEEP continues the CAP analysis. The actions presented are illustrative and remain under development. They do not constitute formal recommendations from DEEP.

- Transportation**
- Residential & Commercial Buildings**
- Electric Power (Consumption)**
- Industrial**
- Waste & Wastewater**
- Agriculture**
- Natural & Working Lands**

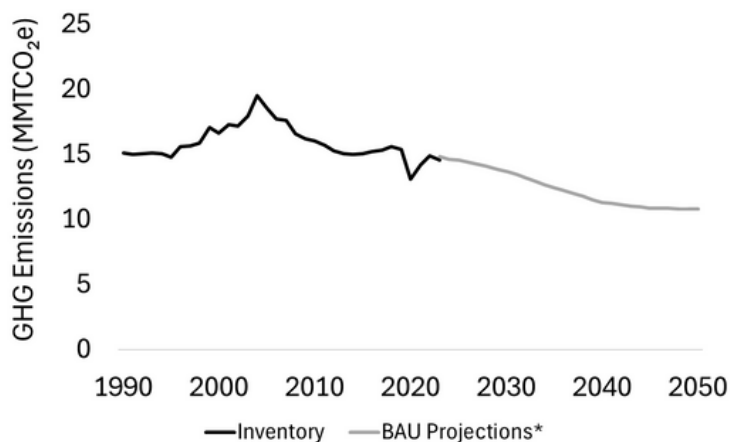
Take the [CAP Survey](#) to share your climate priorities with DEEP

¹The natural gas leakage inventory sector is not represented in the CAP sectors. See [Connecticut Greenhouse Gas Reduction Progress Reports](#) for more GHG inventory data.



Sector Emissions and BAU Projections

In 2023, the transportation sector accounted for 14.6 MMTCO₂e (41.7%) of statewide emissions. This total does not include emissions from transportation electricity consumption, which are included in the power sector. Gasoline use accounted for almost 73% of sector emissions. Transportation sector emissions peaked in 2004 and have been declining since. From 2022 to 2023, transportation emissions decreased by 2%, despite an increase in vehicle miles traveled (VMT), due to increased real-world fuel economy as well as electric vehicle (EV) and biofuel use. This trend is expected to continue with a projected decrease in sector emissions through 2050.



*Results are preliminary and subject to change

CAP Measures and Potential Implementation Actions

Measure 1: Reduce VMT.

This measure will quantify GHG emission reductions associated with **driving fewer miles** in Connecticut, achieved through mode shifting to transit and micromobility. Potential implementation actions to achieve these reductions may include but are not limited to:

- Increasing Active Transportation/Complete Streets infrastructure
- Expanding residential and commercial transit-oriented development
- Expanding public transit and micromobility options
- Pursuing recommended public transit and rail improvements, and increasing transit frequency and access

Measure 2: Expand vehicle electrification, EV infrastructure, and zero- and low-carbon fuels in on-road vehicles.

This measure will quantify GHG emission reductions from the **accelerated adoption of zero-emission vehicles** (ZEVs) and increased use of **zero- and low-carbon fuels** such as hydrogen and renewable diesel. Potential implementation actions to achieve these reductions may include but are not limited to:

- Incentivizing consumer purchase of ZEVs
- Deploying charging and fueling infrastructure for ZEVs
- Supporting and expanding transit and school bus electrification
- Leading by example through state agency transportation practices

Measure 3: Decarbonize the off-road transportation sector, including ports, airports, and rail.

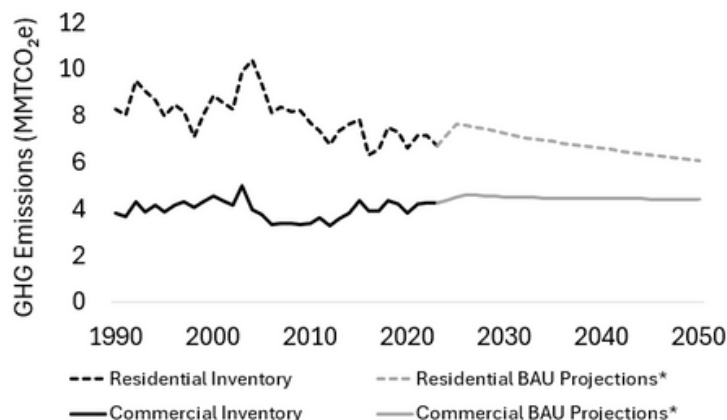
This measure will quantify GHG emission reductions from the increased use of **low carbon fuels**, like the use of renewable diesel and sustainable aviation fuel in rail, off-road equipment, and airplanes, and the **electrification** of rail, off-road equipment, and ferries. Potential implementation actions to achieve these reductions may include but are not limited to:

- Supporting aviation and maritime industry decarbonization
- Electrifying off-road equipment such as lawn equipment, recreational equipment, and forklifts



Sector Emissions and BAU Projections

In 2023, residential and commercial buildings accounted for 11.0 MMTCO₂e (31.4%) of statewide emissions. This total does not include emissions from building electricity consumption, which are included in the power sector. Residential building emissions have recently declined due to lower heating demand and progress in building weatherization and energy efficiency. Commercial building emissions declined in the mid-2000s due to fuel switching, rose in the mid-2010s due to an increase in natural gas heating demands, and have stabilized recently. Residential emissions are projected to decrease from increased efficiency and electrification, but higher demand projections in the commercial sector will offset efficiency and electrification gains through 2050.



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CAP Measures and Potential Implementation Actions

Measure 4: Increase energy efficiency in existing residential and commercial buildings.

This measure will quantify GHG emission reductions from a **decrease in energy consumption** achieved through improved efficiency in existing residential and commercial buildings. Potential implementation actions to achieve these reductions may include but are not limited to:

- Expanding and promoting energy efficiency and demand management programs offerings
- Increasing weatherization through expanded funding to address health and safety barriers

Measure 5: Increase electrification in existing residential and commercial buildings.

This measure will quantify GHG emission reductions from the **accelerated conversion of energy-consuming equipment** from non-electric sources of energy to electricity in existing residential and commercial buildings. Potential implementation actions to achieve these reductions may include but are not limited to:

- Supporting increased adoption of heat pumps statewide
- Replacing other gas-fired appliances in existing buildings with electric alternatives

Measure 6: Maximize energy efficiency in new residential and commercial buildings.

This measure will quantify GHG emission reductions from a **decrease in energy consumption** achieved through improved efficiency in new residential and commercial buildings. Potential implementation actions to achieve these reductions may include but are not limited to:

- Expanding high efficiency heating and cooling in new buildings
- Promoting adoption and enforcement of energy-efficient building codes

Measure 7: Maximize electrification in new residential and commercial buildings.

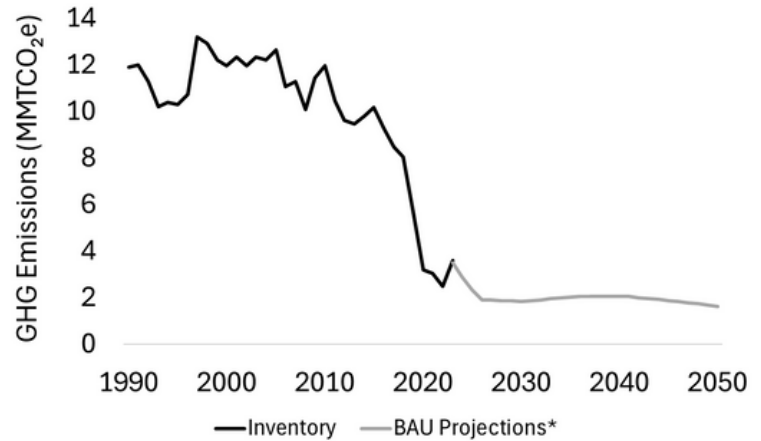
This measure will quantify GHG emission reductions from the **accelerated adoption of electric energy-consuming equipment** in new residential and commercial buildings. Potential implementation actions to achieve these reductions may include:

- Implementing zero-emission heating equipment standards (ZEHES)
- Incentivizing installation of electrified heating, drying, and cooking equipment



Sector Emissions and BAU Projections

In 2023, the emissions associated with electricity consumed in the state were 3.6 MMTCO₂e (10.3%) of statewide emissions under a consumption-based framework. While electricity consumption in Connecticut decreased in 2023, the emissions associated with that electricity consumption increased. The increase in emissions is due to a decrease in available zero-carbon electricity due to Millstone nuclear power plant units' outages/maintenance and a decrease in the quantity of renewable energy certificates (RECs) from wind. Emissions from electricity use are projected to remain relatively constant through 2050, with limited electricity demand growth and a similar generating resource mix.



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CAP Measures and Potential Implementation Actions

Measure 8: Expand grid-scale clean energy resources.

This measure will quantify GHG emissions reductions from **expanded grid-scale clean energy power generation**, building on current clean energy and carbon reduction policies in the state, including the Renewable Portfolio Standard (RPS) and participation in the Regional Greenhouse Gas Initiative (RGGI). Potential implementation actions to achieve these reductions may include but are not limited to:

- Setting target levels of solar and other renewables to be distributed to Connecticut residents
- Participating in a regional wind program

Measure 9: Deploy distributed clean energy resources.

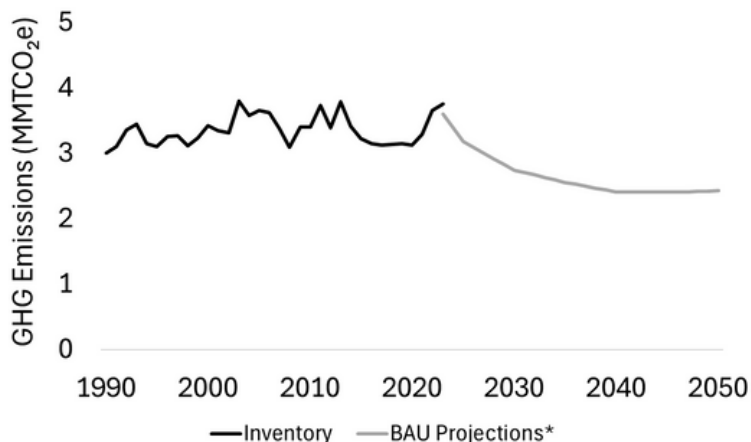
This measure will quantify GHG emission reductions from an increase in **distributed clean energy generation** through the deployment of distributed and small-scale clean energy resources. Potential implementation actions to achieve these reductions may include but are not limited to:

- Providing funding for residential distributed storage (home batteries)
- Using demand response and energy storage



Sector Emissions and BAU Projections

In 2023, the industrial sector accounted for 3.8 MMTCO₂e (10.7%) of statewide emissions. This total does not include emissions from industrial building electricity consumption, which are included in the power sector. Industrial sector emissions have remained relatively stable over time due to limited industrial activity within the state. Emissions from this sector are projected to decrease through 2045, largely due to the phase down of hydrofluorocarbons (HFCs) under the American Innovation and Manufacturing (AIM) Act. These reductions are partially offset by the projected growth in stationary combustion emissions at industrial facilities, driven by economic growth.



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CAP Measures and Potential Implementation Actions

Measure 10: Decarbonize industrial processes through energy efficiency, electrification, and low carbon fuels.

This measure will quantify GHG emission reductions from **decreased energy consumption** and increased **use of electric equipment and low-carbon fuels** by industrial facilities. Potential implementation actions to achieve these reductions may include but are not limited to:

- Establishing an incentive program for industrial manufacturers to switch from boilers to heat pumps where low or medium process heat is used
- Creating incentives and providing technical assistance to increase the use of high efficiency equipment

Measure 11: Expand Carbon Capture Use & Storage (CCUS) at industrial facilities.

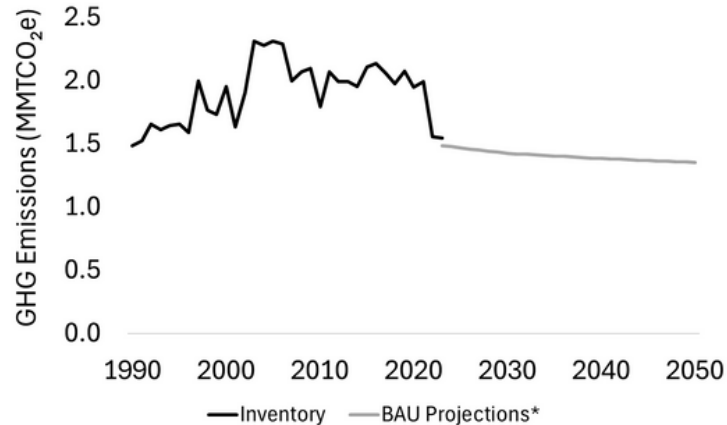
This measure will quantify GHG emission reductions from the **installation of CCUS at industrial facilities**. Potential implementation actions to achieve these reductions may include but are not limited to:

- Exploring CCUS pilot programs and small-scale demonstrations
- Developing a long-term plan to identify industrial sites for future decarbonization opportunities



Sector Emissions and BAU Projections

In 2023, the waste sector accounted for 1.5 MMTCO₂e (4.4%) of statewide emissions. Waste sector emissions have decreased in recent years due to the closure of two resource recovery facilities (RRF) in the state and an increase in the amount of waste exported for disposal out of state. Emissions from RRF are projected to remain constant into the future while emissions from the decomposition of waste that was previously landfilled within the state will continue to decline, resulting in an overall projected decline in emissions. At the same time, emissions from waste that is exported for treatment outside the state, which are not within the scope of the state's inventory, are projected to increase.



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CAP Measures and Potential Implementation Actions

Measure 12: Reduce emissions from the disposal of organic solid waste.

This measure will quantify GHG emission reductions from the increased reduction and diversion of **organic solid waste**. Potential implementation actions to achieve these reductions may include but are not limited to:

- Establishing a network of community fridges to reduce food waste
- Establishing and expanding food waste/food rescue diversion programs
- Expanding access to community composting and assessing the need for industrial-scale composting

Measure 13: Reduce emissions from the disposal of non-organic solid waste.

This measure will quantify GHG emission reductions from increased **non-organic solid waste diversion**. Potential implementation actions to achieve these reductions may include but are not limited to:

- Connecting municipalities with waste infrastructure grants
- Expanding recycling programs
- Establishing extended producer responsibility (EPR) programs for consumer packaging

Measure 14: Reduce methane emissions from public WWTPs.

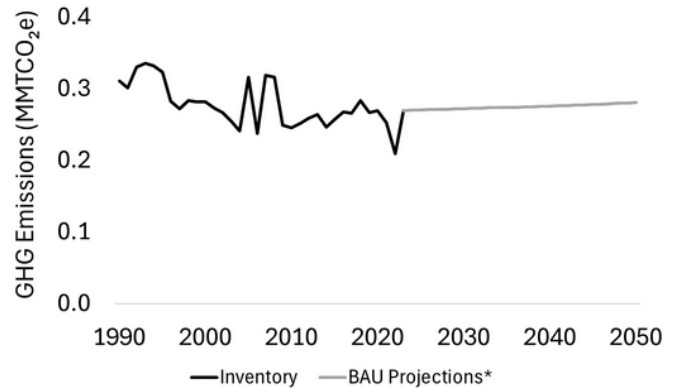
This measure will quantify GHG emission reductions from the minimization of **methane emissions** at public wastewater treatment plants (WWTPs). Potential implementation actions to achieve these reductions may include but are not limited to:

- Installing methane monitoring and detection equipment
- Allocating funding for equipment upgrades



Sector Emissions and BAU Projections

In 2023, the agriculture sector accounted for 0.3 MMTCO₂e (0.8%) of statewide emissions. Emissions from livestock are the largest source of agricultural sector emissions in Connecticut followed by emissions from managed soils. Emissions are projected to increase slightly through 2050 due primarily to a projected increase in livestock population, which drives increases in emissions from enteric fermentation and manure management.



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CAP Measures and Potential Implementation Actions

Measure 15: Increase soil carbon sequestration and reduce emissions from agricultural soils.

This measure will quantify GHG emission reductions from **increased soil sequestration** and **changes in soil management** practices. Potential implementation actions to achieve these reductions may include but are not limited to:

- Implementing climate friendly management practices on croplands
- Promoting agricultural land preservation and improving management of grasslands and pasturelands
- Supporting local food production, urban agriculture, and farm-to-school initiatives

Measure 16: Reduce methane emissions from livestock and manure.

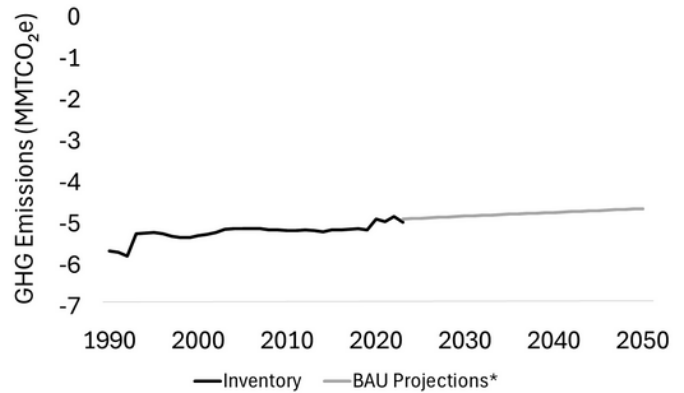
This measure will quantify the GHG emission reductions from **livestock and manure management** through the expanded use of feed additives, construction of new anaerobic digesters, and adoption of less emissive manure management systems. Potential implementation actions to achieve these reductions may include but are not limited to:

- Deploying anaerobic digesters on medium-large scale farms
- Deploying covered manure pits
- Expanding the use of feed additives to reduce enteric methane emissions from livestock



Sector Emissions and BAU Projections

The natural and working lands (NWLs) sector is a net carbon sink, sequestering an estimated 5.0 MMTCO₂e in 2023. Connecticut's NWLs are comprised of forests and woodlands, urban tree canopies, grasslands, wetlands, and urban green spaces. Forests and urban trees account for nearly all of the sector's sequestered emissions. Sequestration is projected to decline slightly through 2050, largely due to anticipated changes in land cover.



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CAP Measures and Potential Implementation Actions

Measure 17: Increase protection and conservation of high-carbon coastal habitats, wetlands, grasslands, and forests.

This measure will quantify the increase in carbon sequestration resulting from **avoided land conversion** and **improved land management**. Potential implementation actions to achieve these reductions may include but are not limited to:

- Implementing reforestation and afforestation efforts
- Exploring ecosystem services markets/compensation options for landowners
- Reducing impacts of development on natural areas by preserving existing natural working lands and improving land management
- Reducing emissions and support carbon sequestration on aquatic natural and working lands

Measure 18: Increase and manage urban tree canopy.

This measure will quantify the increase in carbon sequestration resulting from **increased tree canopy** across urban regions in Connecticut. Potential implementation actions to achieve these reductions may include but are not limited to:

- Increasing tree canopy coverage across Connecticut to match Hartford's goal of 35% coverage by 2070
- Planting trees in environmental justice areas and increasing urban tree cover