

Climate Action Plan 2022

Cut Emissions & Build a Healthy Connecticut



Save the Sound[®]
Action for our region's environment.



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Acknowledgments

We dedicate this call for action to our dear, late friend and colleague, Melissa J. Schlag. As Save the Sound's Climate Advocate, she passionately fought for government accountability and environmental justice. Her work guiding interns and managing the initial stages of this project were invaluable. We hope those who read this Action Plan take up her mantle to fight for climate action, now. Time is short and the future relies on our resolve.

This Connecticut Climate Action Plan was made possible by a collaboration between **Save the Sound** and **The Yale Center on Climate Change and Health**, with participation by other allies and advisors. The consulting firm **Synapse Energy Economics** provided its expertise in economic impact modeling and analysis. This Action Plan focuses on climate mitigation strategies and recommendations for Connecticut; we plan to issue a companion adaptation and resilience Action Plan. For an explanation of the methodology used to determine climate mitigation best practices and assess Connecticut's climate mitigation policies, see page 34.

Save the Sound leads environmental action in the Long Island Sound region. We fight climate change, save endangered lands, protect the Sound and its rivers, and work with nature to restore ecosystems. What makes us unique among regional nonprofits is the breadth of our toolkit and results. We work in many ways, from legislative advocacy and legal action to engineering, environmental monitoring, and hands-on volunteer efforts. Together, we restore and protect all that impacts the Long Island Sound region's environment, from rivers and shorelines to wetlands and forests, from the air we breathe to the waters of the Sound itself. For five decades we've been ensuring people and wildlife can enjoy the healthy, clean, and thriving environment they deserve—today and for generations to come.

We are grateful to the following for major support of Save the Sound's work on climate change: Common Sense, The John Merck Fund, the Lockhart Vaughan Foundation, the SwedeHeart Family Fund, and the Vranos Family Foundation. We would like to thank our climate team Laura McMillan, Alex Rodriguez, Charles Rothenberger, and Leah Lopez Schmalz, and interns Prabisha Bhandari, Spencer Kinyon, and Alison McHorney, and along with all the Save the Sound supporters who are helping to combat climate change, especially our Climate Change Taskforce: Paul Ahern, Ben Baker, Bruce Becker, Richard Granoff,

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Acronyms and Abbreviations

- BIPOC:** Black, Indigenous, and People of Color
- CCA:** Community Choice Aggregation
- CHEAPR:** Connecticut Hydrogen and Electric Automobile Purchase Rebate
- DEEP:** Connecticut Department of Energy and Environmental Protection
- DOT:** Connecticut Department of Transportation
- EJ:** Environmental Justice
- EV:** Electric Vehicle
- GHGs:** Greenhouse Gas Emissions
- ISO-NE:** Independent System Operator–New England
- MOU:** Memorandum of Understanding
- NESCOE:** New England States Committee on Electricity
- PURA:** Public Utilities Regulatory Authority
- PV:** Photovoltaic
- RGGI:** Regional Greenhouse Gas Initiative
- RTT:** Renewable Thermal Technology
- SCC:** Social Cost of Carbon
- TCI:** Transportation and Climate Initiative
- TCI-P:** Transportation and Climate Initiative Program
- ZEV:** Zero Emission Vehicle



For more information

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CLIMATE ACTION PLAN BY SECTOR

Overview

The Good News? Efforts to combat climate change have never been so fierce. New and vocal constituents in the medical, emergency planning, insurance, and youth sectors have all taken a stand and organized to fight for climate justice and climate action.

The Bad News? Connecticut is not on track to meet its greenhouse gas reduction mandates. Which means not only have we not taken enough strides on climate in the last 15 years, but we will need to play catch up with bolder initiatives in this year, and the years to come.

Despite New England's reputation as a place of snowy winters and mild summers, the Northeast is the fastest warming region in the contiguous United States.¹ And Connecticut is one of the fastest warming states in the region, with an increase of more than 2°C since 1895—double the average of the lower 48 states.² Here, the average annual temperature rose by over 0.9°C (1.62°F) between 1980 and 2018.³ During this period the average winter temperature increased by 1.6°C (2.88°F).⁴ Winters are getting shorter and warmer, with less ice and fewer days below freezing, while summers are getting longer and hotter, with more prolonged heat waves and days of extreme heat.⁵

Our state has long recognized the threat of climate change and is actively working to reduce greenhouse gas (GHG) emissions and increase resilience to climate change. Critically, Connecticut's Global Warming Solutions Act, passed in 2008, establishes legal mandates for GHG reduction targets of **10% below 1990 levels by 2020,**

45% below 2001 levels by 2030, and **80% below 2001 levels by 2050.**⁶

Unfortunately, Connecticut is already falling behind in its efforts to meet those climate goals. Compounding that reality is the fact that science now demonstrates that these existing targets are too low—at those reduction levels Connecticut is not doing its fair share. As we backslide, very real climate impacts continue to hammer our residents: more extreme heat days and accompanying respiratory issues, more frequent and severe storms, rising sea level and increased flood events.

comes at a time when the best available science, reported through the Intergovernmental Panel on Climate Change, indicates that a net-zero target by 2050 is essential if we are to avoid the most catastrophic impacts of climate change. We must adopt bold climate policies that will move us along the path to this net zero future, and follow the lead of our neighboring jurisdictions in providing accountability and enforceability for our landmark climate law.

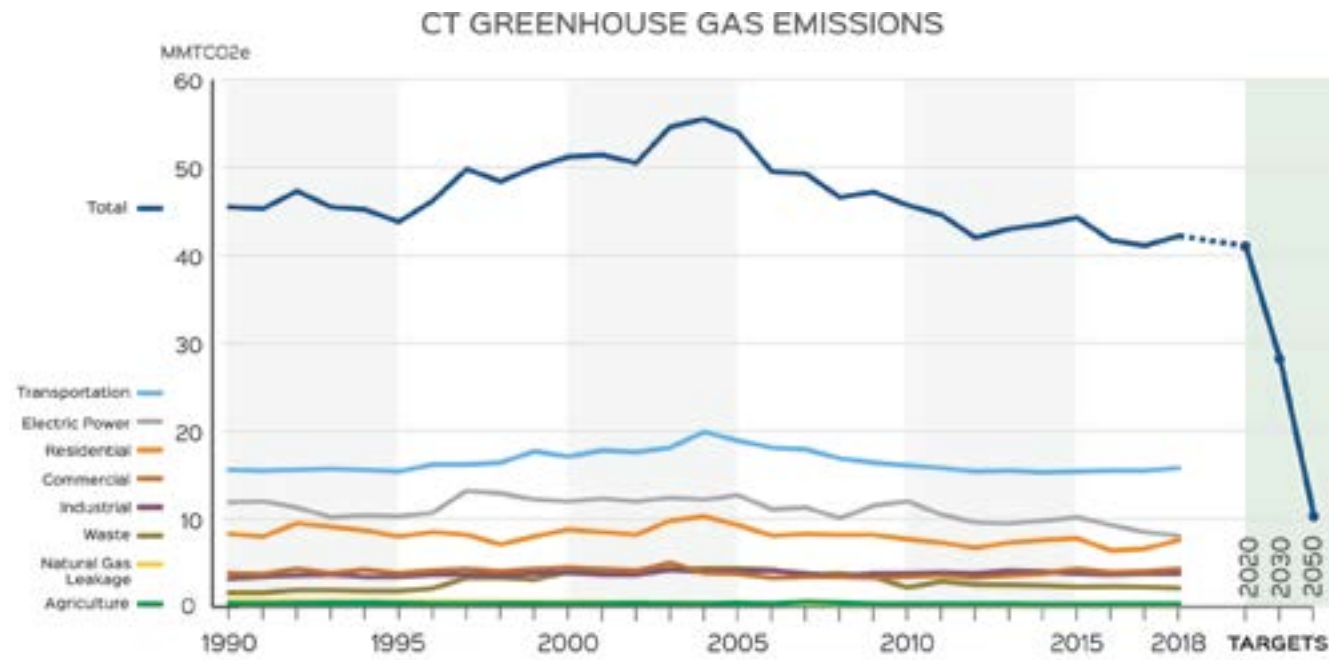
Connecticut has implemented policies aimed at reducing GHGs from electricity, transportation, and other

Legislative action is needed now.

This Climate Action Plan provides a short list of critical policies that our legislature should pass to ensure the state meets its GHG reduction targets in an equitable way. It also evaluates best practices for climate mitigation and Connecticut's progress toward implementing them.

While the Governor's Council on Climate Change (GC3) has issued recommendations for meeting these targets, and Governor Lamont has issued several executive orders to promote action, the most recent Connecticut GHG Inventory report indicates that we are not on track to meet our greenhouse gas reduction targets, and that emissions in some sectors continue to grow—outpacing even 1990 levels. This

significant sources of emissions.⁷ These policies have cut emissions, especially from the electric sector. But they are only a starting point. Evaluating Connecticut's progress toward meeting its greenhouse gas reduction obligations pursuant to the Global Warming Solutions Act in its most recent greenhouse gas inventory, DEEP concluded that the state is not on track to meet its 2030 and 2050 emissions targets,⁸ noting that:



[while] Connecticut has made important initial progress toward decarbonizing electricity generation... ambitious measures are needed to decarbonize the transportation and residential sectors [and] it is urgent that the state reduce emissions across other sectors of the economy as well. Rapid, sustained action across all sectors of the economy will be required for Connecticut to meet its climate goals.⁹

To change the current trajectory, Connecticut must make climate change a much bigger priority and implement significantly more ambitious mitigation

policies. Given the pause on enacting the Transportation and Climate Initiative program—one of the most critical GHG emissions reduction policies available to the region—significant progress in 2022 policy enactment is required.

When the first round of comprehensive state laws to address climate change were passed, Connecticut was a leader on the issue. In recent years, our neighboring states have adopted bold climate policies, adopting more stringent targets, establishing greater accountability, and providing mechanisms for enforcing the law. It is time for Connecticut to redouble its efforts to meet the climate crisis head-on.

Why do Connecticut's actions on climate change matter?

Leadership: Connecticut's climate policy decisions can influence climate policy in other jurisdictions and drive climate action at the state and regional levels.

Co-benefits: Climate action can produce localized co-benefits, such as reducing local air pollution, in addition to limiting GHG emissions. Public health benefits can be especially valuable for communities experiencing environmental injustice.

Economic benefits: Taking early action to implement climate solutions can provide Connecticut with a first mover advantage by accelerating the adoption of innovative technologies, creating green jobs, and securing federal funding and incentives.

Justice: The extreme urgency of the climate crisis demands that all jurisdictions take aggressive action to reduce GHG emissions as quickly, cost-effectively, and equitably as possible.

How This Plan is Structured

This Climate Action Plan reflects on the recommendations found in the Governor's Council on Climate Change reports, state executive orders advancing climate action, and Save the Sound's *Policy Rubrics* of best practices for climate mitigation.¹⁰ It then condenses and prioritizes those recommendations into short- and long-term pathways, **with a focus on legislative action needed within the next five years.** Policy recommendations are prioritized based on their potential to reduce GHGs, improve equity and public health, and promote a clean energy economy.

Using the data compiled in the attached *Policy Rubrics Appendices*, the Climate Action Plan analyzes Connecticut's top three sources of emissions: electricity, transportation, and buildings. For each sector, and an additional

cross-sector category, we excerpted high-level decarbonization policy actions from the *Policy Rubrics Appendices*, which compare those emission reduction best practices under consideration throughout the United States with Connecticut's actions through 2021.

Following that policy Climate Action Plan is an economic analysis that highlights the job creation co-benefits of implementing certain policies and our *Four Step Action Guide to a Healthier Climate*, a checklist of advocacy tools to empower residents to effectively advocate for climate action. We then provide background on 1) each sector's *Policy Rubric Appendix* and a numeric representation of where Connecticut stands in relation to those best practices; and 2) climate change issues and impacts in Connecticut.

How to Read This Plan

This action plan includes policy recommendations to put Connecticut on track to meet its climate goals, reduce greenhouse gas (GHG) emissions, improve public health, and promote equity. Short-term actions are those which we recommend prioritizing within the next one to two years, while long-term actions are more realistic within five years. (Notably, some of the policies that would have the greatest impact in reducing GHGs are the most politically difficult to implement.)

Items highlighted in green represent justice and equity provisions, while items highlighted in blue represent health policy opportunities.

CLIMATE ACTION PLAN BY SECTOR

Cross-Sector Policy Action Plan



According to Connecticut’s most recent GHG inventory, emissions were **2.9 percent higher** than the state’s 2020 emissions goal. Cross-Sector GHG mitigation strategies highlight opportunities for economy-wide decarbonization planning, education, and outreach.

Actions

Authorize citizen suits for failure to meet statutory GHG targets.

Failure to meet the state’s statutory GHG reduction targets should constitute “unreasonable pollution or impairment” of natural resources under state law, authorizing any citizen to bring a citizen suit seeking declaratory and equitable relief.¹¹ This would hold the state accountable to its climate mitigation targets.

Provide DEEP with broad regulatory authority to address climate.

Within the framework of accountability and enforceability, our administrative agencies must have the ability to act to meet the climate crisis. The Department of Energy and Environmental Protection should have the authority to promulgate regulations and establish programs to mitigate climate emissions to ensure success in meeting our statutorily mandated greenhouse gas reduction obligations.

Require climate analysis and mitigation for state projects.

State agencies should be required to analyze and mitigate the climate impacts of all projects that fall

under their jurisdiction, and to make this information publicly available. This requirement would increase transparency and accountability and mitigate climate impacts.

Climate analysis for proposed legislation.

The Office of Fiscal Analysis or a similar entity should prepare a brief climate impact analysis for each bill that receives a fiscal note.¹² The climate analysis should estimate the impact that the bill would have on GHG emissions. The social cost of carbon should be used in the climate analysis.

Update emissions reduction targets to reflect the best available science.

The state’s 2050 emissions target should be revised to a net-zero requirement, in line with the IPCC’s analysis of necessary reductions to avoid the most catastrophic consequences of climate change. Additional interim targets should be established to better gauge progress towards medium and long-term emissions targets.

Improved monitoring. Monitoring and oversight of state climate policies should be increased to better gauge

their effectiveness. Data should be publicly available and updated regularly.

Develop public outreach and education campaigns on climate change. Campaigns should focus on climate impacts (including public health impacts), resilience, and how residents and businesses can prepare. Targeted outreach and education materials should be developed for low-income and BIPOC communities that are particularly vulnerable to climate impacts.

Increase Community Benefit programs' transparency and investment in communities. The state should require that nonprofit hospitals provide more publicly available information on their Community Health Need's Assessments, set a minimum spending floor, and ensure climate-related health impacts are part of investments, particularly in areas with a legacy of environmental injustice.



Electricity Policy Action Plan

According to Connecticut's most recent GHG inventory, the electric sector accounts for 19.1 percent of the state's GHG emissions. Demand has flattened due to energy efficiency gains, but is likely to increase as the transportation and buildings sectors are electrified.

Short-Term Actions

Require 100 percent zero carbon electricity by 2040. The Connecticut legislature should codify the clean electricity target established by Governor Lamont in Executive Order No. 3.

Protect funds for clean energy and energy efficiency. Connecticut must protect its clean energy and energy efficiency funds¹³ from being diverted for other purposes.

Allocate Low Income Home Energy Assistance Program funds to weatherization and barrier remediation. The state can provide more equitable access to energy efficiency improvements by implementing a more coordinated and robust combined weatherization and barrier removal approach. With a goal of retrofitting 1 million homes, in 2021, the Low-Income Energy Advisory Board approved creation of a Weatherization Barrier Remediation Program with \$2 million of LIHEAP funding. Concurrently, Governor Lamont identified \$14 million in American Rescue Plan funding to address health and safety barriers and energy efficiency in low-income

housing. These efforts can provide the foundation for a \$10 million/year consistent, coordinated, and robust program that includes workforce development and training to remediate barriers to providing weatherization and energy efficiency improvements (i.e., fix safety concerns first so energy improvements can be made) and help to lower the energy burden for low- and moderate-income households.

Increase solar generation by expanding or removing the cap on the shared clean energy facilities program. Connecticut should follow other states by establishing a long-term shared clean energy program that allows for full program potential by expanding or removing the existing MW cap.

Energy storage. Connecticut should incentivize 250MW of additional battery storage by 2025 (above the 100MW expected to be online by 2024).

Price externalities. Connecticut should statutorily require DEEP and PURA to account for the externalized costs of fossil fuel electric generation in utility planning and procurement processes.

Improve the Renewable Portfolio Standard by eliminating biomass as a Class I renewable. The RPS includes carbon emitting fuel sources, such as biomass, in its definition of Class I renewable energy credits (RECs) and these biomass RECs account for

the majority of Class I compliance, masking the limited growth of true clean energy. This is a design flaw that needs to be remedied through the phase-out and elimination of biomass from the Class I definition.

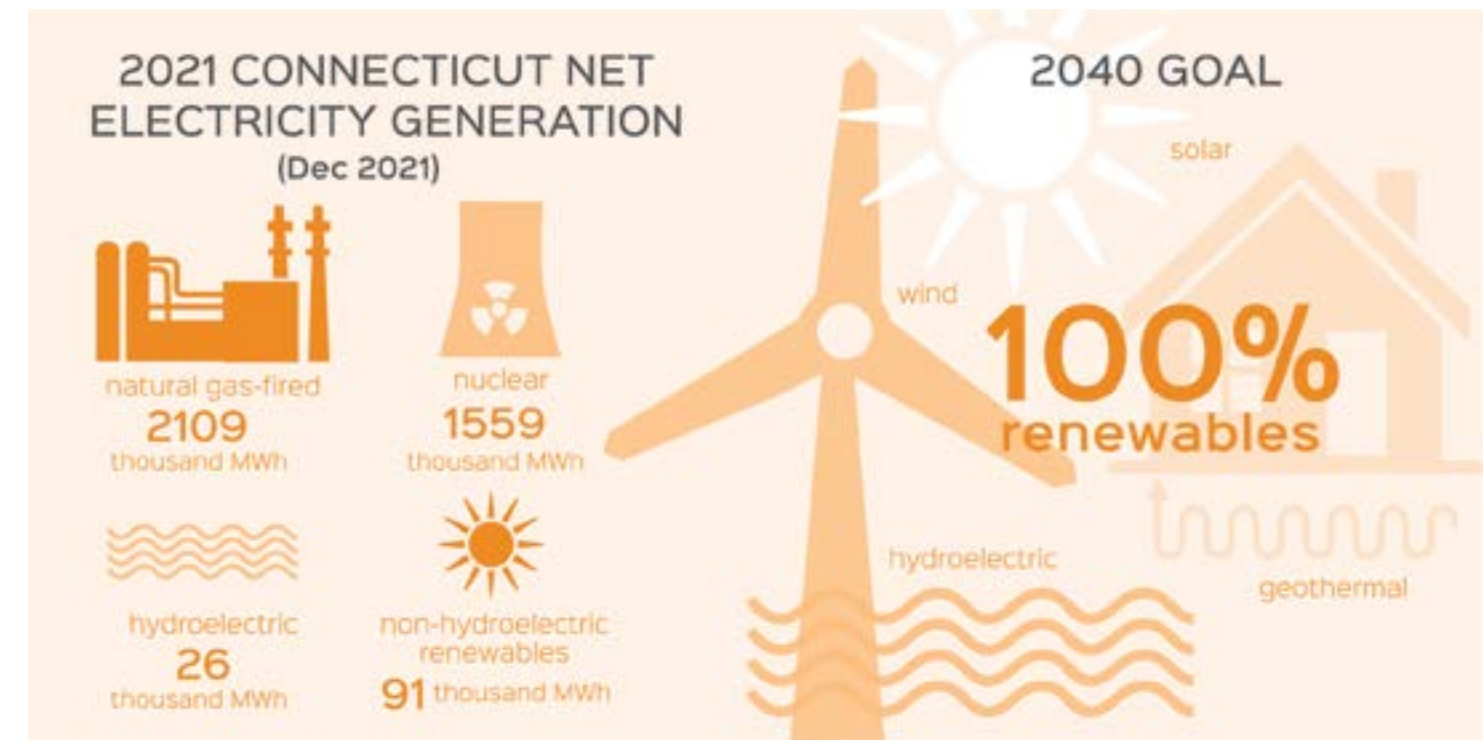
Long-Term Actions

Meet offshore wind procurement target by 2025. Connecticut should procure the full 2000 MW of offshore wind authorized by statute.¹⁴ DEEP has already selected an 804 MW project (the Vineyard Wind project). DEEP should issue another round of RFPs to select an additional 1100+ MW of offshore wind by 2025.¹⁵

transmission planning process to facilitate the efficient integration of offshore wind and distributed energy resources, and reforming the governance structure of ISO-NE to give states and consumers more voice and to improve transparency and accountability.¹⁶

Advocate for changes in wholesale electric market design, transmission system planning, and governance of ISO-NE to facilitate regional grid decarbonization. Connecticut should continue working with other New England states to advocate for reforming the wholesale electric market design to align with states' clean energy and climate laws, initiating a long-term regional

Authorize community choice aggregation with clean energy requirements. Community choice aggregation allows local governments to purchase power wholesale from alternative sources for residents, businesses, and municipal buildings. It can be used to accelerate the growth of clean energy if municipalities require clean energy as part of their programs.





CLIMATE ACTION PLAN BY SECTOR

Transportation Policy Action Plan

According to Connecticut's most recent GHG inventory, the transportation sector accounts for 37.4 percent of the state's GHG emissions. It is by far the largest source of GHG emissions in the state. Most of these emissions come from gas and diesel-powered passenger cars and trucks.

Short-Term Actions

Implement the Transportation and Climate Initiative Program.

As one of the first states to formally sign on to TCI-P, Connecticut is well positioned to play a leading role in developing this cap-and-invest program for the transportation sector. Connecticut should continue to work on robust program rules and encourage participation by additional jurisdictions, while working towards legislative passage.

Eliminate CHEAPR sunset provision and restore rebate levels to pre-2019 levels.

The CHEAPR program is authorized through December 31, 2025. This sunset provision should be eliminated and the program extended. In 2019, Connecticut reduced CHEAPR rebates and EV sales plummeted. Rebate levels have been temporarily restored by the inclusion of time-limited incentive adders; once these adders expire, base incentive levels should be set to levels shown to be effective. This would reinvigorate the program, increasing its effectiveness and bringing it in line with similar programs in neighboring states. In 2019, the General Assembly directed \$3 million of an increase in the state's

Greenhouse Gas Fee on motor vehicle registrations to be used to support CHEAPR.¹⁷ The full \$8 million generated by the fee¹⁸ should be dedicated to the state's CHEAPR electric vehicle incentive rebate program.

Provide additional incentives for EVs, such as a state tax credit, exemption from state sales tax, and temporarily eliminating or reducing the state vehicle property tax for EVs.

Offer reduced transit fares for low-income riders. Offer reduced fares or free passes for low-income riders, subject to income verification, to incentivize more low-income state residents to use public transit, increasing transit ridership while also promoting equity.

Fully consider and prioritize equity in clean transportation policies.

Connecticut should explicitly recognize the links between transportation policy and equity by actively engaging with low-income, BIPOC, and underserved communities to better meet their needs, and by prioritizing clean transportation policies that also promote equity.

Integrate public health into transportation programs and planning. The state Department of Transportation and other transportation authorities should regularly coordinate with the state Department of Public Health, other state and local public health officials, and community groups to ensure that public health is fully considered and

prioritized in transportation programs and planning, including public transit.

Adopt the California Advanced Clean Truck and Advanced Clean Cars II standards to ensure new light-duty vehicles sold in the state are zero-emission by 2035 and medium- and heavy-duty trucks by 2050.

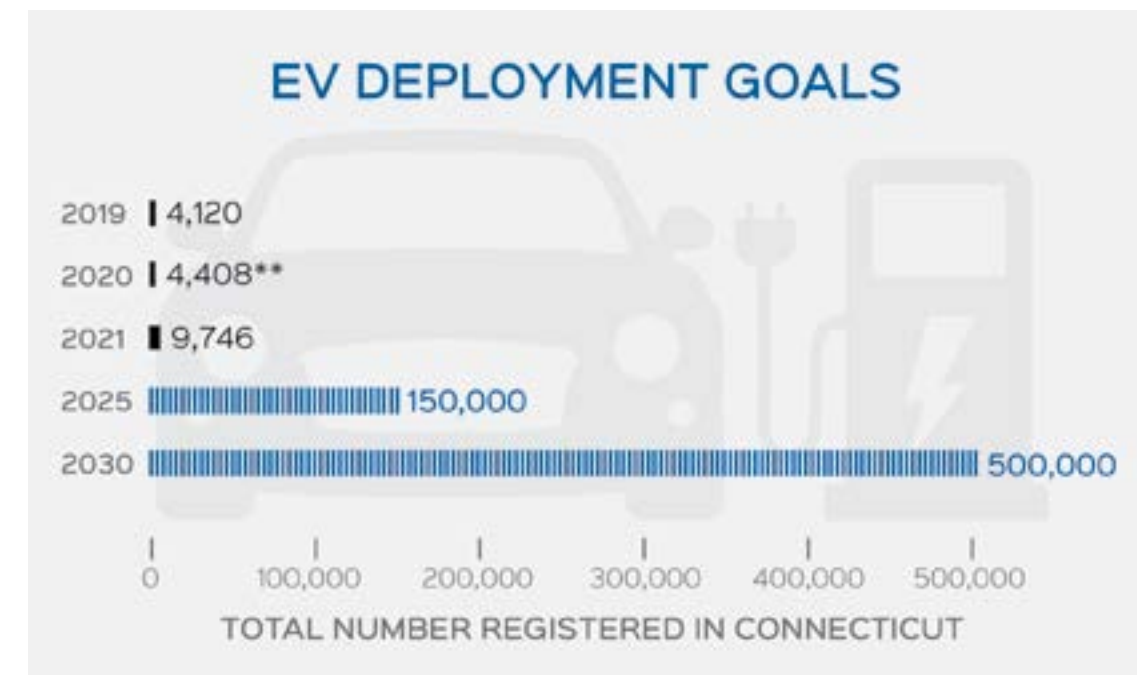
Long-Term Actions

Implement pricing to reduce congestion and vehicle miles traveled (VMT). Governor Lamont recently directed the Department of Transportation to establish a 2030 VMT reduction target and develop a plan to accomplish it. To support these goals, Connecticut should implement congestion pricing and/or a VMT fee, plus a statewide program to price parking. Implementing one

or more of these pricing mechanisms would reduce emissions, improve public health, and generate revenue for Connecticut to invest in clean transportation. Because pricing mechanisms can disproportionately burden low-income drivers, the equity implications of such policies should be considered and mitigated to the extent feasible.

Require climate analysis and mitigation for state transportation projects. The Connecticut DOT should be required to analyze and mitigate the climate impacts of all transportation projects that fall under its jurisdiction and to make this information publicly available. This requirement

would increase transparency and accountability and mitigate climate impacts resulting from transportation projects.



** Please note that due to the Covid-19 pandemic, these numbers may be affected by registration expiration dates extended by Executive Orders.



Buildings Policy Action Plan



*According to Connecticut's most recent GHG inventory, residential buildings account for **18.0 percent** of the state's GHG emissions, while commercial buildings account for **10.3 percent**. Collectively, the buildings sector accounts for **28.3 percent** of the state's GHG emissions.*

Short-Term Actions

Incentivize renewable thermal technologies¹⁹ such as air source heat pumps, ground source heat pumps, solar thermal, and district heating and cooling by developing public education campaigns and offering incentives for residential and commercial buildings, including financing programs and rebates.

Eliminate subsidies that support reliance on natural gas for buildings. Connecticut should wind down and end the System Expansion Plan for natural gas ahead of its scheduled December 2023 end date.²⁰ That program has consistently under-performed (to the detriment of customers) and is no longer in line with state climate policy. The Conservation and Load Management program should similarly

eliminate subsidies for natural gas equipment, as such subsidies do not align with the state's statutory greenhouse gas reduction goals and promote the indoor combustion of gas which has been shown to adversely impact human health.

Green building standards for public housing. Connecticut should mandate green building standards for new construction of public housing and retrofits.²¹ Alternatively, the state could establish incentive programs and other resources specifically to increase green building practices in public housing. This could be paired with renewable incentive programs designed specifically for public housing agencies.

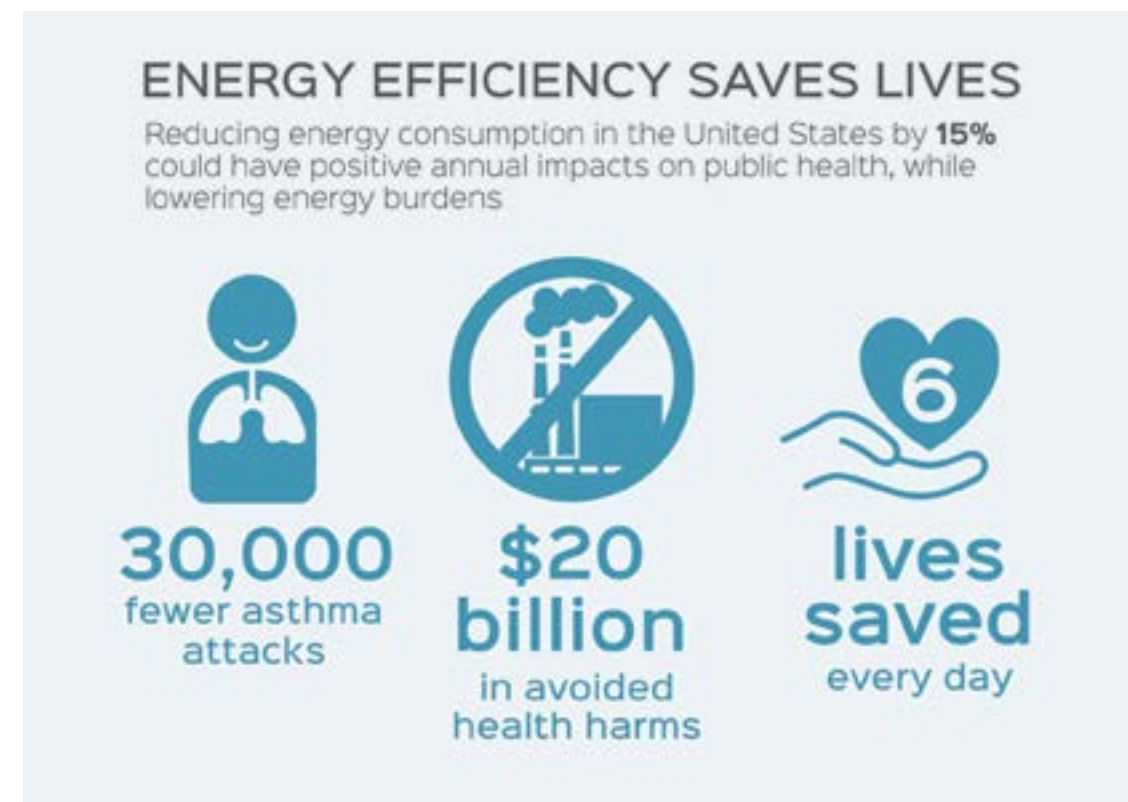
Long-Term Actions

Up-to-date building codes. Pass legislation requiring state building codes to be aligned with the most recent International Energy Conservation Code (IECC) standards for residential and commercial buildings.

Green building training programs. Connecticut should establish green building training and apprenticeship programs at technical high schools and community colleges, along with training opportunities for established professionals already in the field. *To increase equity and expand opportunities for underrepresented*

groups in the green building sector, Connecticut should provide resources and support for BIPOC residents, women, and low-income residents, including job re-training.

Public education and visibility. Connecticut should develop educational campaigns that emphasize the advantages of green buildings, including energy cost savings and *public health benefits*, and encourage participation in the state's incentive programs. Such efforts could include the adoption of building energy labeling requirements.



CLIMATE ACTION PLAN BY SECTOR

Environmental Justice and Equity Policy Action Plan



Low-income and BIPOC communities often bear a disproportionate share of environmental and climate injustice. These inequities must be addressed through an inclusive process that ensures our state regulatory structures eliminate disproportionate harm. As the communities that will bear the highest burden from climate change, they stand to benefit the most from meaningful climate action.

Environmental Justice and Equity

Permitting limitations. Prohibit DEEP from issuing permits that would result in cumulative environmental or public health impacts in an already overburdened community that are higher than those borne by other communities (unless the permitted activity serves a compelling public purpose in that community). Cumulative impacts include combined past, present, and foreseeable pollution.

Comprehensive coverage of facilities. Ensure that the list of facilities covered by EJ law is comprehensive.

Comprehensive definition of EJ communities. Ensure that the state's definition of EJ communities is comprehensive. Consider including language barrier or racial demographic criteria, as New Jersey does.

Comprehensive application of EJ law. Change of use or modification to an existing permit should trigger application of the EJ law, if not otherwise covered by an "expanded" permit. Permit renewals should require an environmental justice impact review to aid in understanding existing pollution burdens.

EJ impact statement. Permit applicants should be required to submit an environmental justice impact statement with their permit application to DEEP, which shall review the impact statement in determining whether to approve a permit. The impact statement must be publicly available and posted on DEEP's website.

Public notice requirements. Require notification of proceedings that would affect a state-designated EJ community to be published in non-English newspapers, when applicable.

Timing requirements. Limit the time between the public hearing process and the permit application submission to ensure that the public can stay engaged in both the public hearing and actual permitting process (or require continued engagement by the permit applicant and DEEP between these processes). Applicants must also notify the public of subsequent public comment opportunities during permit proceedings.

Public hearing requirements. Require that hearings be recorded and that the recordings be made publicly available and translated, when applicable. Require written response to comments and summary of changes made to proposed activity in response to community dialogue.

Citizen suit provision. Add a citizen suit provision authorizing parties to challenge permit approval when public participation requirements are violated or when the agency does not comply with EJ impact determination.

Funding for EJ programs. Authorize a permit application fee to fund review by DEEP staff and EJ programs.

Public involvement in CEBA negotiations. Require involvement of community members throughout the negotiation of a community environmental benefit agreement.



CLIMATE ACTION PLAN

Job Creation Opportunities: Expanding Connecticut's Climate Policies

Erin Camp, PhD, and Ben Havumaki
Synapse Energy Economics, Inc.
March 23, 2021

OVERVIEW

Synapse estimated Connecticut specific job creation opportunities from a suite of clean energy policy options for the electricity, transportation, and buildings sectors. Except where noted, the policies considered covered the construction period from 2021 to 2025, and an ongoing operations period equivalent to the lifetime of each project.

For the transportation sector, we examined the economic impacts of ramped up electric vehicle (EV) adoption. While new investment in EVs is not expected to directly affect Connecticut's manufacturing

sector, the associated spending on EV charging stations should have a measurable impact on employment and was estimated in this analysis. For the buildings sector, we assessed the job impacts of expanded investment in residential heat pumps.

Finally, for the electricity sector, Synapse estimated the impacts of several changes: increases in spending on energy efficiency, solar, and energy storage, increased investment in offshore wind development, and an expedited timeline for already planned offshore wind projects.

Table 1. Clean energy policy options evaluated

Sector	Policy Option
Transportation Sector	Investing in EV charging stations to meet high ZEV MOU goal
	7% of residential load served by heat pumps by 2025
Buildings Sector	7% of residential load served by heat pumps by 2025
	100 MW per-year additional behind-the-meter PV
Energy Sector	\$204 million in annual energy efficiency investment
	70 MW per-year additional utility-scale PV**
	100 MW per-year additional behind-the-meter PV
	40 MW per-year additional shared PV
	50 MW per-year additional battery storage
100 MW per-year additional offshore wind	
Expedited offshore wind development	

**PV = Photovoltaic

Table 2. Jobs results²²

POLICY	CONSTRUCTION JOBS	O&M JOBS	OPERATION PERIOD (YEARS)
EV charging stations	58	44	10
Heat pumps	842	13	15
Energy efficiency*	1,099	—	—
Utility-scale PV**	419	56	32
Behind-the-meter PV	1,227	80	32
Shared PV	308	24	32
Battery storage	36	62	20
Offshore wind (new capacity)	2,036	421	30
Offshore wind (accelerated timeline)*	2,436*	151	30

Notes: *Jobs reported for accelerating planned offshore wind projects will accelerate the creation of jobs rather than materializing new jobs. Energy efficiency programs do not require O&M and do not produce O&M jobs.

**PV = Photovoltaic

To assess each of the policies, Synapse used the IMPLAN input-output model and the best available estimates of labor wages and other key inputs to calculate the number of full-time construction jobs expected to be sustained through the construction period. We also calculated full-time operations and maintenance (O&M) jobs, which will persist through the operations period.

RESULTS

We present results in full-time equivalent (FTE) positions for each of the policies in Table 2. Construction jobs are sustained FTE positions from 2021 through 2025. For example, investing in and installing residential heat pumps will employ about 842 people in Connecticut through 2025. The maintenance of those heat pumps will employ about 13 people in Connecticut for 15 years, or until 2040.

As shown in Table 2 above, the expected job impacts are highly variable across the different policies. This variance reflects multiple factors, including differences in total investment spending between the policies, the relative concentration of the various industries in Connecticut, and the labor-intensiveness of construction and O&M in each of the affected industries.

The results provide an important but limited view of the total economic impact of clean energy policies. While the job results above omit downside effects associated with *foregone* spending—e.g., reduced spending on traditional fossil fuel-powered generation and potential job losses—they also miss key benefits. One such benefit is the expected economic stimulus produced by fuel savings as consumers save on gasoline for their vehicles and fossil fuels to heat their homes.



CLIMATE ACTION PLAN

Four-Step Action Guide to a Healthier Climate for Connecticut Residents

1) FORTIFY YOURSELF WITH FACTS

- Make sure your news sources are trustworthy and check your facts at factcheck.org
- Find out more about climate change in Connecticut, at publichealth.yale.edu/climate/YCCCH_CCHC2020ActionPlan_395366_5_v1.pdf
- Join webinars that help you communicate climate issues to friends and family: climatecommunication.yale.edu/; climatecommunication.yale.edu/news-events/category/videos-events/; or maybe our climate webinar youtube.com/watch?v=6XW7t1-Zxmg
- Sign up for local alerts on your town's website; follow your state elected officials on social media, and sign up for their newsletters.
- Learn more about Save the Sound's legislative agenda at savethesound.org/our-toolbox/advocacy/

- Find out when your elections are happening, at usvotefoundation.org/vote/state-elections/state-election-dates-deadlines.htm

2) ADVOCATE FOR CONCRETE ACTION—AT HOME, IN TOWN, AND IN HARTFORD

- Write a letter to the editor or op-ed for your newspaper on climate issues, and link them to your personal experience.
- Testify on legislation pushing a bold climate agenda—in person, via Zoom, or by email. We can help! Sign up here: savethesound.org/take-action/join-activist-network/
- Ask your town to declare a climate emergency—local impact that leverages state action. See the Climate Emergency Resolution map: tinyurl.com/ClimateEmergencyCT
- Advocate in local planning and development processes for climate emissions and resilience considerations for new development proposals.

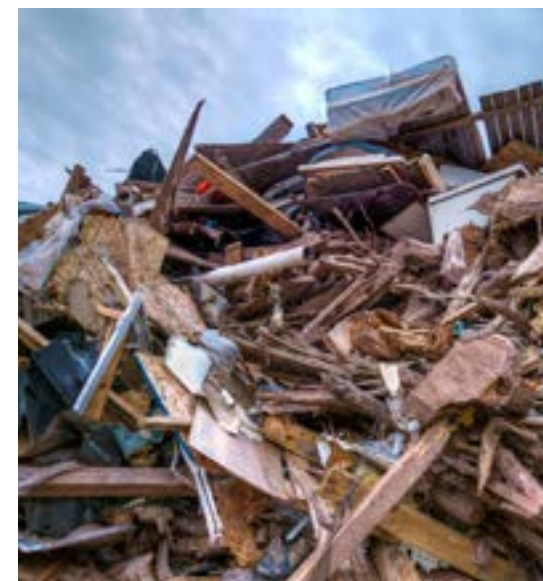
- Let the governor and commissioners of state agencies know that you value action on climate, and provide simple, personal comments on DEEP and PURA decisions.
- Vote for the elected officials who share your climate values. Register at Vote.gov

3) MOBILIZE OTHERS

- Volunteer to teach others, at climaterealityproject.org/training
- Organize a climate “learn and act” session in your community.
- Develop a postcard campaign to support climate action legislation.
- Participate in climate lobby days.
- Join Save the Sound's Youth Eco Advocacy Corps by emailing alexrodriguez@savethesound.org

4) REWARD LEADERSHIP

- Thank your elected officials for taking action. From local to federal levels, they work hard for their constituents, and they remember when people appreciate their efforts. A leader who is thanked for acting boldly is more likely to do so again!





CLIMATE ACTION PLAN

Four-Step Accountability Agenda for Connecticut Legislators

1) UPDATE GHG TARGETS

- Connecticut should follow the best available science in creating a net-zero emissions target by 2050, which is now widely recognized as necessary.
- Adopting zero carbon goals for additional sectors, in parallel with Governor Lamont’s call for a 100% zero-carbon electricity by 2030 mandate, will address all Connecticut’s major sources of GHGs.
- Integrating more regular benchmarking for emissions reductions targets—at five-year intervals—will allow adjustments in real time.

2) CREATE ACCOUNTABILITY

- State agencies and other administrative boards and commissions *must* incorporate an evaluation of climate impacts in their decision-making and require mitigation measures when agency action results in increased emissions.

- Other states have done it: Massachusetts, Rhode Island, and Vermont have already integrated this analysis into their administrative decision-making process.
- In October 2021, New York used a similar authority to deny air emissions permits for two gas power plant projects.

3) ESTABLISH ENFORCEABILITY

- Connecticut has a long history—since the 1970s—of empowering citizens to ensure that the state meets its commitment to preserving our land, air, and natural resources.
- This authority must be explicitly extended to our landmark climate law. Meeting our climate obligations is fundamental to protecting our natural resources.
- Again, other states in the region, such as Rhode Island and Vermont, have explicitly provided the public the right to enforce the provisions of their

climate laws when their government fails to act.

4) EXPAND AUTHORITY

- Our administrative agencies must have the authority to tackle the climate crisis.
- Freeing government to take the steps necessary to reduce emissions is essential. DEEP should be given the clear authority to promulgate regulations and establish programs necessary to meet our statutorily mandated obligations.
- Once more, our neighboring states of Massachusetts, New York,

Rhode Island, and Vermont all have explicitly granted this authority to their agencies. We need to give DEEP the tools it needs to live up to the challenge of achieving Connecticut’s climate mandates.

The time is now to update Connecticut’s landmark climate law to reflect the urgent need for action, and to provide the tools necessary to ensure the *state at least does its part* to combat this global crisis. We need **AUTHORITY, ACCOUNTABILITY, and ENFORCEABILITY.**

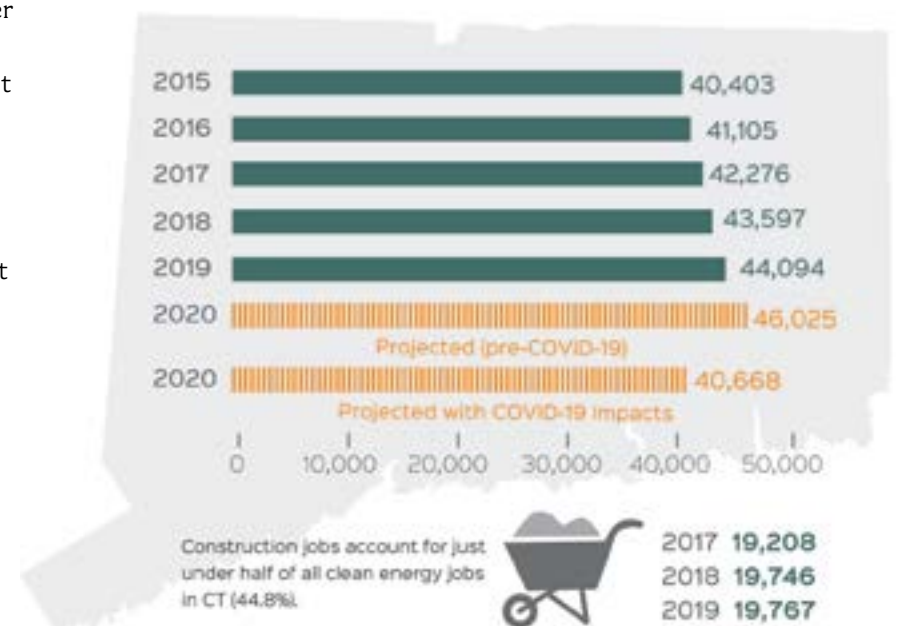
Conclusion

Climate change is happening at an ever-quicken pace. While Connecticut has made strides in mitigating GHGs, its most recent data shows that not only are we not on track to hit the state’s required targets, but in some sectors, emissions are actually *higher* than the 1990 baseline.²³ And, the closer we get to those mandated deadlines, the steeper the hill is to climb: our limited action is compounded, requiring ever more significant cuts to emissions each and every year. As we backslide, very real impacts continue to hammer our residents: more extreme heat days (and the respiratory toll they take on our most vulnerable citizens), more frequent and more severe storms, rising sea level rise and increased flood events.

Once a leader on climate, slowly Connecticut’s leadership has eroded, leaving us to lag behind other neighboring states. They have updated their climate laws, adopting more stringent targets, establishing greater accountability, and providing mechanisms to enforcing the law. It is time for us to follow suit.

We know what needs to be done. The next step is action—by our legislators and by residents of Connecticut.

CLEAN ENERGY EMPLOYMENT IN CONNECTICUT



BACKGROUND

Policy Rubrics:

Best Practices and Connecticut's Climate Action Progress

The Scores and Rubrics

After extensive literature review and interviews, Save the Sound and project partners from the Clinic in Environmental/Climate Justice, Sustainability, and Public Health developed a scoring rubric based on best practices nationwide.²⁴ Special attention was paid to identifying best practices that addressed equity and public health. The rubrics are organized into five columns:

- **A reference number that refers to the relevant sub-sector and item number**
- **A best practices theme for each sector**
- **The scoring scale:**

Each best practice was assigned three scores: a mitigation score, an equity score, and a public health score. The mitigation score gauges how effectively the policy contributes to climate mitigation efforts; the equity score encompasses social and environmental justice considerations of climate policy; and the public health score evaluates how state mitigation policies incorporate and address public health concerns. This column lays out the total number of mitigation, equity, and public health points available, based on the number of best practices identified for the subsector. For example, if a subsector best practice contains six mitigation strategies, the state's mitigation score for that row will be evaluated out of six. If the state has implemented three out of the six best practices for mitigation,

its mitigation score will be 3/6. If no relevant mitigation, equity, or public health criteria exist for a checklist item, the relevant scoring chart will be listed as "N/A."

- **The best practices criteria:** These criteria were developed from the best practice reports, literature, and interviews. This column establishes a comprehensive list of characteristics for the best possible policy. The criteria are listed in lettered bullet points which may briefly summarize the item's relevance to mitigation, equity, and/or public health. These criteria are color-coded: **black text** indicates that a criterion only counts toward the mitigation score; **green text** indicates that the criterion is relevant to both the equity and mitigation scores; **blue text** indicates that the criterion is relevant to both public health and mitigation; and **turquoise text** indicates that a policy is relevant to equity, public health, and mitigation. Each green, blue, or turquoise criterion has a bracketed reference to the applicable equity and/or public health principle (as reflected in our lists of Equity and Public Health Principles in the Appendix).
- **Scoring Connecticut's performance:** This column assesses Connecticut's mitigation, equity, and public health scores for each checklist item, following

the scoring method explained above. The color-coding in the best practices criteria column carries forward to this column. In addition, those criteria for which Connecticut receives a point are bolded. Accordingly, a bold green criterion in this column indicates that Connecticut has enacted this equity best practice, while a non-bolded blue criterion indicates that Connecticut has not enacted this public health best practice. To earn points, the state must have a clear, state-level written statute, public act, executive order, or program on a state-run department website. If any of the mitigation, equity, or public health scoring charts are listed in as "N/A," then the corresponding score will also be listed as "N/A." If equity or public health best practices do exist for a checklist item but Connecticut has not yet implemented the overarching policy, the relevant score is listed with an underscore in the numerator instead of an integer. This means Connecticut only loses points once for its failure to implement a certain mitigation policy, and is not double penalized.

The scored rubrics for each sub-sector identify areas where the state performs strongly and can provide leadership to other states and, conversely, areas where the state could improve. The total numbers illustrate the performance of each sub-sector. Although some sub-sectors are assigned more best practice questions than others, this is not an indication that any one sub-sector is more important than another. Rather, it merely reflects the fact that a different number of best practice questions could be formed for each sub-sector. To account for this discrepancy, the sub-sector scores were weighted equally to produce three final sector scores that represent the average percentage of mitigation, equity, and health best practices that Connecticut has enacted for each sector. Lastly, given the importance of the Equity and Health considerations, a special system of scoring was used for questions that included equity or public health criteria: to achieve a four or five, the equity or public health components of that question must be met.



Key Findings

By some measures, Connecticut is clearly a climate leader. It is among the minority of states that consistently take meaningful action on climate change. It has been proactive about establishing mandatory GHG reduction targets, joining regional initiatives to limit emissions from the electric and transportation sectors, and developing policies and programs to mitigate climate change. Connecticut's energy efficiency and clean energy financing programs are especially effective, and the state's Green Bank—the first in the nation—has been very successful. Its positive impact

in Connecticut has led other states to establish their own green banks.

However, these actions still fall short of what is needed to reach Connecticut's legally mandated GHG reduction targets. The state legislature is not doing enough to ensure that Connecticut is on track to meet its climate goals, and some programs have stagnated from funding cuts and lack of investment. While the GC3 effort is ongoing and executive orders addressing climate have been issued, recent data shows that current legislated policies are inadequate to meet the state's 2030 and 2050 climate targets.²⁵

Electricity

Connecticut has significantly reduced emissions from the electric sector, which is the state's third largest source of emissions.²⁶ In general, Connecticut's electric sector climate policies are more comprehensive and well established than the state's policies for other major sources of GHGs. Connecticut is a leader in energy efficiency and clean energy financing, which have been effective at driving down GHGs. Some of the state's most significant actions for this sector include establishing the nation's first Green Bank, which administers clean energy finance programs, effective energy efficiency programs, a well-designed Renewable Portfolio Standard, and participation in the Regional Greenhouse Gas Initiative, with proceeds invested in clean energy and efficiency programs (notably excepting the millions of dollars that have been diverted to address the state's budget deficits).

Although Connecticut has made progress in reducing emissions from the electric sector, there are still significant opportunities for improvement. For example, the legislature should pass permanent protection of rate-payer funded clean energy and energy efficiency programs. Connecticut should also improve mechanisms for pricing externalities from fossil fuels to fully capture these costs. The legislature should remove the MW cap and improve the shared clean energy facilities (SCEF) program so more residents can access clean energy, and it should facilitate and accelerate the growth of solar and offshore wind. The legislature should more substantially invest in clean energy and energy efficiency programs specifically for low-income and BIPOC communities and ensure that its policies are equitable and promote public health (for example, by providing outreach and resources to address health hazards like

mold and asbestos, which can erect a barrier to energy efficiency improvements). Finally, Connecticut should continue coordinating with other New England states to advocate for changes to facilitate regional grid decarbonization.

A HIGH-LEVEL PLAN TO DECARBONIZE THE ELECTRIC SECTOR

- **Increase energy efficiency.** This reduces the demand for electricity, which means less electricity needs to be generated. This is especially important when fossil fuels play a significant role in electricity generation. As the grid is decarbonized, efficiency becomes less effective at directly reducing GHG emissions, but efficiency remains an important long-term mitigation strategy because it flattens demand and limits the necessity of building out the grid with additional generation and transmission capacity. These benefits become increasingly important as we increase the beneficial electrification of the building and transportation sectors.²⁷
- **Use renewables to generate electricity.** Stop using fossil fuels to generate electricity and instead transition to renewable sources of energy that do not produce GHGs, such as wind and solar. Both grid-scale and distributed renewable resources (microgrids, residential rooftop solar, etc.) should play a role.
- **Implement battery storage** and smart grid applications to ensure that there will always be enough electricity to meet demand. (This is necessary because wind and solar are intermittent energy sources.) Natural gas—fired power plants are still frequently used as back-up generation, but that is not a long-term solution because gas must be phased out and replaced with zero-carbon sources of energy.

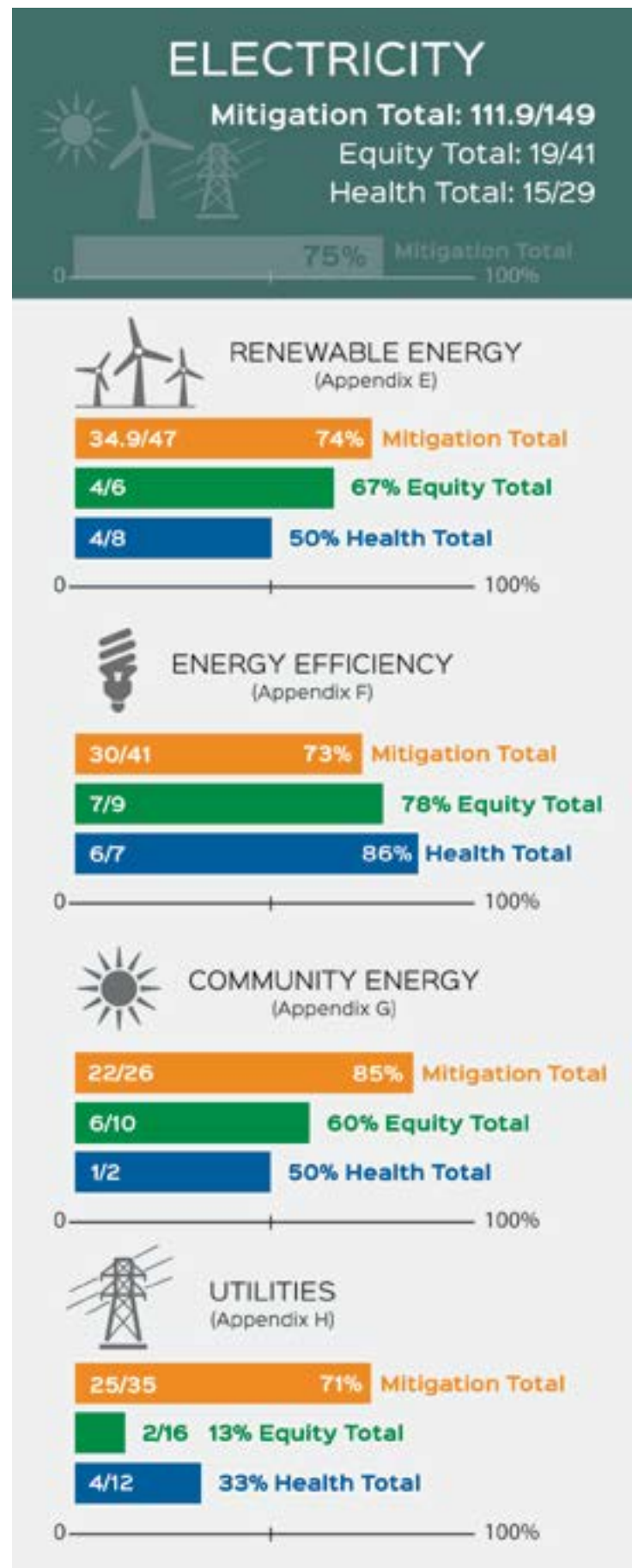
BEST PRACTICES TO REDUCE EMISSIONS: ELECTRIC SECTOR

ENERGY EFFICIENCY:

- **Treat energy efficiency as a resource.** Treat energy efficiency as a viable (and ideally, preferable) alternative to electric generation. Prioritize cost-effective energy efficiency and demand reduction measures to meet the state's electricity needs.
- **Financing programs and incentives.** Establish stable, long-lasting energy efficiency programs. Offer energy efficiency incentives and financing programs for residential and commercial consumers, **including programs for low-income consumers.**
- **Public awareness.** Promote energy efficiency to consumers and businesses.

RENEWABLE ENERGY:

- **Finance programs and incentives.** Establish renewable energy incentives and financing programs (such as low- or zero-interest loans) for residential and commercial consumers, **including low-income consumers.** Establish programs to incentivize utility-scale renewables and distributed energy resources such as rooftop solar (e.g., tax credits, fast-track permitting, reduced fees, etc.).
- **Tracking and reporting** of renewable energy installations. Data collection should be comprehensive and include location, costs, financing, installed capacity, etc.
- **Net metering and/or feed-in tariff.** Establish a well-designed net metering policy and/or feed-in tariff so producers of clean energy (such as residents or businesses with solar panels) are compensated for excess energy they provide to the grid.



- **Community energy.** Establish community clean energy so people who cannot install their own solar panels can access renewable energy. Allow third-party ownership; provide meaningful public participation opportunities; establish consumer protection standards; and ensure community energy projects include low-income customers.
- **Public awareness.** Promote renewable energy to consumers and businesses.

UTILITY REGULATION:

- **Price externalities.** Authorize or require the externalities of fossil fuels to be accounted for in utilities’ decision-making and in the state public utility commission’s long-term resource planning and resource compensation decisions.
- **Renewable portfolio standard.** Implement a well-designed renewable portfolio standard that requires electric utilities to obtain a specific percentage or amount of the energy they generate or sell from renewable sources.
- **Emissions trading.** Participate in a GHG emissions trading program for the electric sector (such as RGGI) which reduces emissions; provide meaningful opportunities for public participation, including by low-income communities; reinvest funds from the program in clean energy and energy efficiency programs.
- **Battery storage and grid resilience.** Implement battery storage to back up renewables and increase grid resilience. Implement other resilience measures and smart grid applications (such as microgrids, smart meters, and distributed renewables) to increase grid resilience and reduce emissions.
- **Establish interconnection standards** for renewable energy. The timeline for renewable permitting, inspection, and interconnection should be reasonable.

Transportation

Transportation is the largest source of emissions in Connecticut²⁸ and the greatest challenge. The state has laid much of the groundwork for a clean transportation future, but this is only a start. Major changes will be needed to decarbonize the transportation sector. To accelerate these changes, Connecticut participates in several regional and multi-state initiatives to reduce GHG emissions from the transportation sector. Most notably, in December 2020 Connecticut signed on to the Transportation and Climate Initiative Program (TCI-P), a regional cap-and-invest program which aims to reduce GHGs from the transportation sector and reinvest the proceeds in clean transportation.²⁹ However, despite broad public support, in 2021 the legislature failed to pass the initiative. TCI and other regional climate initiatives enable states to collaborate to effectively reduce emissions. There is great potential for coordinated regional action, but participating states need to act more quickly to implement recommended policies and achieve their climate goals. Leading states like Connecticut also have an important role to play in encouraging other states to join these regional initiatives so the programs continue to grow.

A strength of Connecticut’s clean transportation policy is the state’s adoption of California’s clean car standards, which are more stringent than the baseline federal standards and more protective of public health.³⁰ The state has also implemented policies to expand its electric vehicle (EV) charging network³¹ and accelerate EV sales, including a rebate for EVs,³² and to increase the number of zero emission vehicles in its fleet.³³

But Connecticut must take additional action to decarbonize its transportation sector. Most critically, zero-emission cars and trucks must be phased in much more quickly. Most of the state’s transportation emissions come from light-duty cars and trucks, which are overwhelmingly gas-powered. Electrifying transportation is the single greatest change that must happen to decarbonize the sector. Other areas for improvement include the lack of any pricing mechanism to reduce congestion and vehicle miles traveled, a need for more EV and transit incentives, inadequate consideration of equity or public health in transportation programs and planning, and a need for better monitoring and oversight of state programs.

A HIGH-LEVEL PLAN TO DECARBONIZE THE TRANSPORTATION SECTOR

- Produce electricity from renewable sources of energy
- Electrify transportation:
 - Light-duty cars and trucks
 - Medium- and heavy-duty vehicles
 - Public transit
- Expand public transit and increase ridership
- Prioritize transit-oriented development
- Promote non-motorized transportation
- Encourage telecommuting and carpooling
- Prioritize public health and equity
- Reduce freight-related emissions

BEST PRACTICES FOR REDUCING EMISSIONS: TRANSPORTATION SECTOR

OVERARCHING

- **Establish a binding emissions reduction goal** for the transportation sector. Progress should be regularly monitored and publicly reported.
- **Adopt an emissions cap and invest program** for the transportation sector.

VEHICLES

- **Adopt California's clean car standards**, including the zero-emission standards and ZEV program.
- **Establish zero-emission vehicle (ZEV) incentives**, such as rebates, tax credits, and reduced fees and tolls (in jurisdictions where tolls apply).
- **Develop public education** campaigns in collaboration with vehicle retailers and others to promote ZEVs, including experiential education such as ride-and-drive events.
- **Adopt mandatory green fleet requirements** for state and municipal owned or leased vehicles, including public transit and school buses.

FUEL

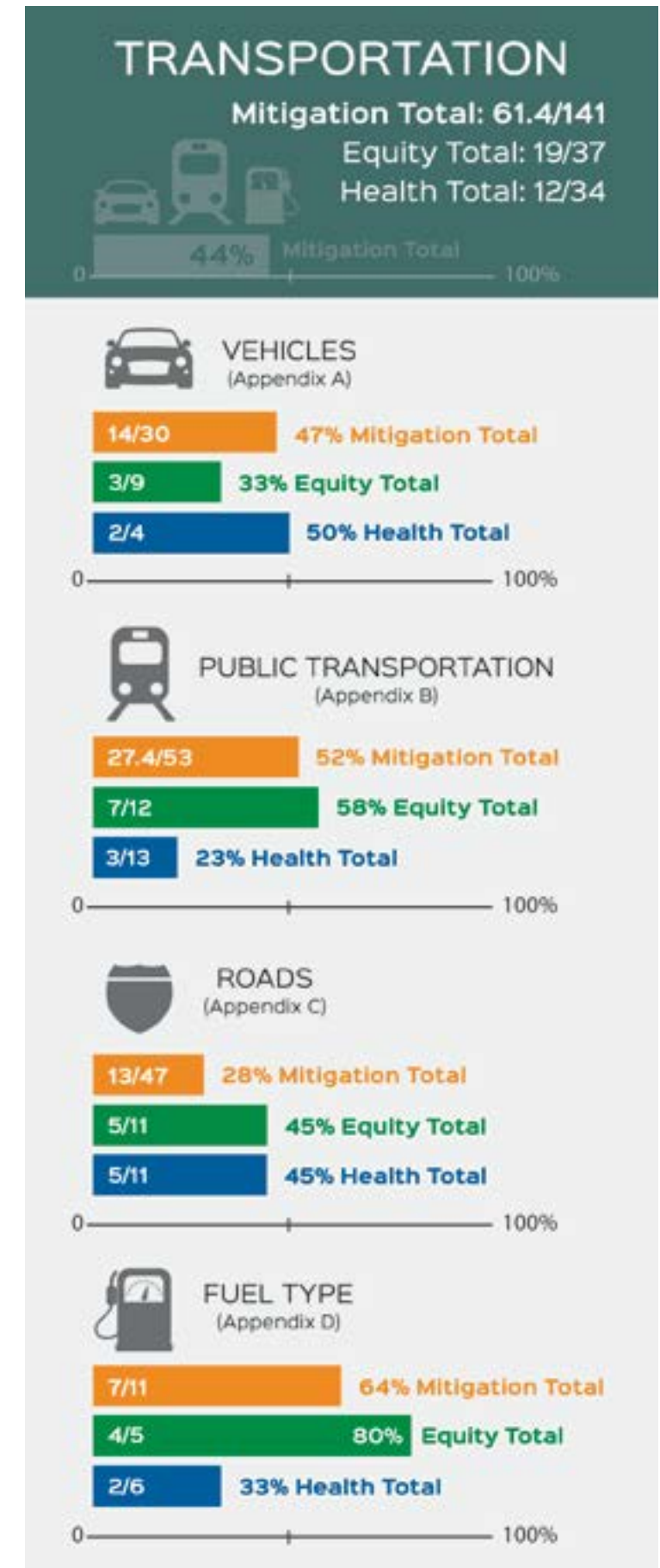
- **Adopt a low carbon fuel standard and/or alternative fuel standard** to require a reduction in emissions from vehicle fuel.
- **Implement financing and incentive programs for alternative fuels**, such as research funding and financial support for EV infrastructure.
- **Invest in public EV infrastructure** to spur adoption of EVs. Equitable use and access to public charging infrastructure should be considered in siting decisions.

ROADS

- **Reduce congestion and vehicle miles traveled (VMT)**, e.g., by implementing tolls, congestion pricing, or a VMT fee, and by pricing parking. **Because pricing mechanisms can disproportionately burden low-income drivers, the equity implications of such policies should be considered and mitigated to the extent feasible.**
- **Implement inclusionary zoning**, which requires a percentage of affordable housing units in municipal zoning. This enables more people to live close to work and avoid commuting by car.
- **Public health impacts of vehicle travel should be studied and mitigated.**
- **Incentivize carpooling** for individuals and businesses, e.g., by creating a carpool lane on congested highways and limiting access to high-occupancy vehicles.
- **Develop a complete streets policy** that makes streets safer for pedestrians and cyclists and increases non-motorized access to public transit while incorporating green infrastructure components to capture and treat stormwater, where feasible.
- **Incentivize non-motorized transport, such as walking and cycling.**

TRANSIT

- **Provide robust public transit**, offering multiple modes of transportation (e.g., bus and rail) in cities and less densely populated areas, with equitable service options provided for each region depending on its needs and characteristics.
- **Convenient and equitable transit information** should be publicly available and easy to access, including schedules, fares, maps, and real-time transit arrival information.
- **Offer transit incentives** such as discounted monthly passes and free or discounted fares for youth, students, seniors, **people with disabilities**, and low-income individuals. Provide tax credits or deductions for employers who offer commuter benefits for transit use.
- **Promote transit-oriented development (TOD)** so more new housing and commercial developments are served by public transit. TOD program development should include inclusive, participatory engagement with multiple stakeholders. The program should be reviewed on a regular basis.
- **Transit data** should be actively measured, recorded, and publicly available.
- **Public health considerations** should be integrated into transit programs and planning.



Buildings

The residential building sector is the third largest source of emissions in Connecticut and the commercial building sector is the fourth.³⁴ Collectively, they are the second largest source of emissions in the state. Decarbonizing the buildings sector presents a challenge for Connecticut because the state has a lot of older, energy inefficient housing, and most buildings in both the residential and commercial sectors rely on fossil fuels for space and water heating. Green building retrofits can be expensive, and many building owners will not undertake improvements unless strong incentives and financing programs are available.

Connecticut has done a good job establishing financial incentives for green buildings. The state offers a range of incentive programs for residential buildings and also provides subsidized home energy audits, which are an important first step before homeowners invest in efficiency upgrades and retrofits. Importantly, the state also has programs to incentivize green multi-family housing. Connecticut also offers incentives and technical assistance programs for commercial buildings. The state provides incentives for green public schools, and its Lead by Example program for state government buildings, while still in the early stages, is a promising opportunity to cut emissions from state buildings and could serve as a model for private commercial buildings.

Decarbonizing the buildings sector in Connecticut will require extensive retrofitting and energy efficiency upgrades for residential and commercial buildings. Public education and contractor training programs, easily accessible and well-funded incentive programs, and targeted outreach

will be critical for the state to reach its GHG reduction goals. Other key opportunities include mandatory building code updates, green building standards for public housing, and programs to promote a rapid transition to renewable thermal technologies, including financial incentives and subsidies for retrofit projects and mandates for new construction. Lastly, stronger, expanded, and well-coordinated efforts are needed to provide resources for residents trying to upgrade energy efficiency but unable to do so due to underlying home health and safety issues.

A HIGH-LEVEL PLAN TO DECARBONIZE THE BUILDINGS SECTOR

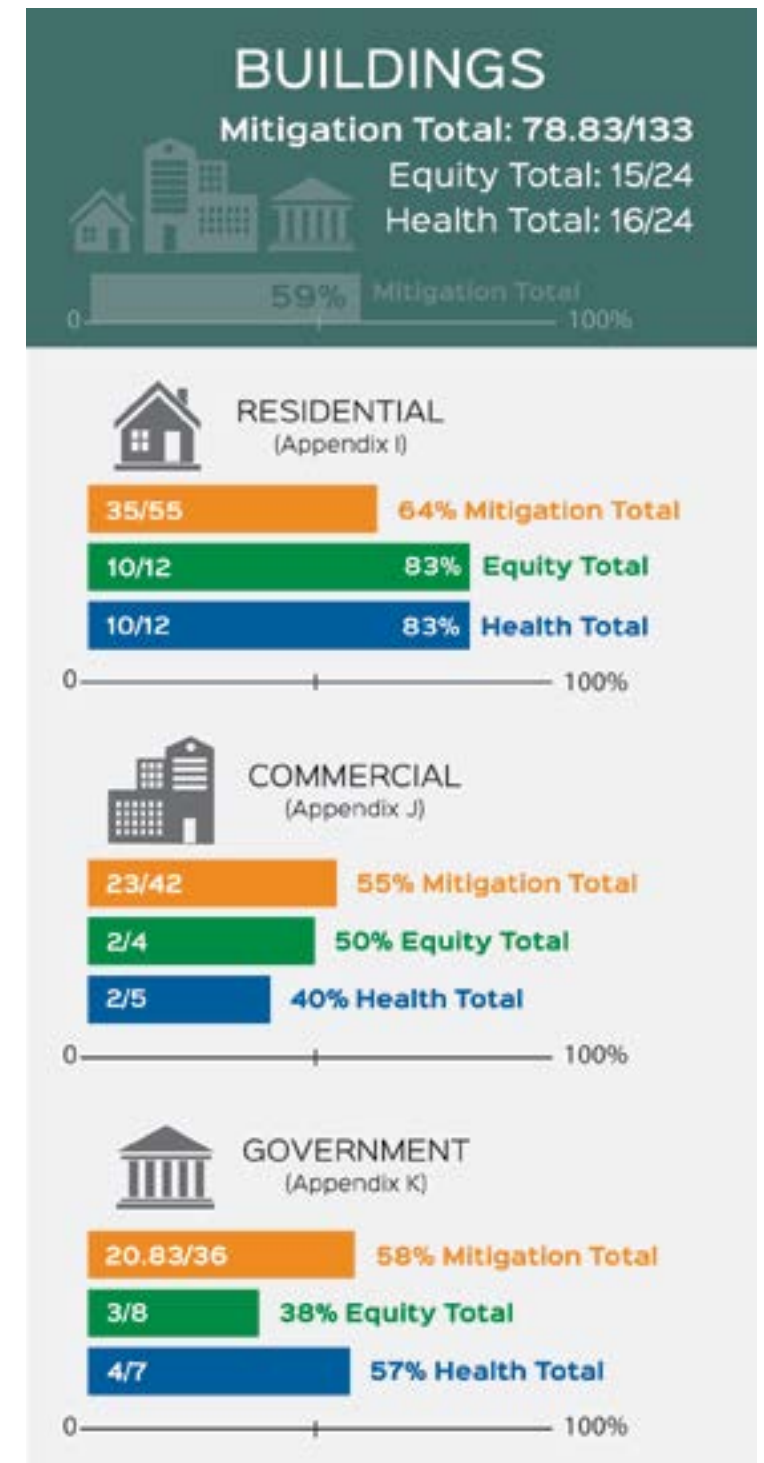
- **Set an emissions reduction goal for buildings** and regularly monitor and report on progress.
- **Ensure building codes are up to date.** Require the most current available energy efficiency building codes (for instance International Energy Conservation Codes) for residential and commercial buildings.
- **Incentivize energy efficiency retrofitting.** Provide energy efficiency retrofitting programs for residential, commercial, and industrial buildings. Offer financial incentives, such as low- or zero-interest loans, to increase participation. For multi-family residential buildings, ensure that programs address the needs of both landlords and renters. For the commercial and industrial sectors, develop tailored solutions for different types of businesses.
- **Incentivize renewable thermal technologies** for residential and commercial buildings (e.g., with research grants, financial incentives such as rebates and tax credits, group purchasing

programs, third-party ownership options, and fast-track permitting).

- **Establish technical training programs** for contractors to become proficient in energy efficiency and green retrofits, including Renewable Thermal Technology-specific training programs.
- **Establish public education programs** to inform state residents and businesses about energy efficiency and retrofit programs, including incentives, financing options, and co-benefits of green buildings (such as cost savings and health benefits).

BEST PRACTICES FOR REDUCING EMISSIONS: BUILDINGS SECTOR

- **A binding emissions reduction goal for the buildings sector** should be established. Progress should be regularly monitored and publicly reported.
- **Building codes.** Up-to-date and enforceable International Energy Conservation Codes (IECC) energy efficiency codes, which are updated every three years, should be implemented for residential and commercial buildings. Legislation should require state adoption of the updated codes every three years so the most recent code is always applicable, and should authorize municipalities to adopt “stretch codes” that are more aggressive than the baseline code, resulting in greater energy savings.
- **Statewide zoning and permitting laws** should encourage energy-efficient residential and commercial buildings (e.g., by reducing permitting fees and/or offering faster permitting for green buildings, and by making inclusionary zoning mandatory).
- **Retrofitting.** Implement a whole-building energy strategy for residential and commercial buildings to maximize



improvements in energy efficiency. Offer subsidized energy audits, including programs for renters and low-income residents, which serve as the entry point to other energy efficiency programs.

- **Provide green retrofit programs for commercial buildings**, including nonprofits, places of worship, small businesses, and hard-to-decarbonize sectors such as hospitals, and **green retrofit programs for the industrial and manufacturing sectors**.
- **Incentivize renewable thermal technology (RTT)** for residential and commercial buildings, e.g., by providing financial incentives, group purchasing programs, third-party ownership (leasing) options, and fast-track permitting.
- **Provide financial incentives for green buildings**, such as grants and rebates for green retrofits and new construction, grants to cover the cost of building certifications (like LEED or Energy Star), tax credits for green retrofits and new construction, and property tax incentives.
- **Provide financing options for green buildings**, such as property-assessed clean energy (PACE) financing for both residential and commercial buildings, on-bill financing and low- or zero-interest loans for green retrofits, and “green mortgages” (borrowing money specifically for building energy efficiency improvements).
- **Green building incentives for multi-family housing** such as technical assistance for building owners, financial assistance programs that address split incentives by providing resources to renters and landlords, and income-eligible programs targeted to low-income residents.
- **Public and low-income housing** should be required to meet green building standards.
- **Include green building/energy efficiency requirements in the qualified allocation process (QAP)** to incentivize green building practices in affordable housing developments. The QAP determines which housing projects receive low-income housing tax credits.
- **Set ambitious green building and energy efficiency requirements for government owned and leased buildings** and require benchmarking of energy use in government buildings.
- **Green schools.** Establish green building standards for public schools and incentivize retrofits and energy efficiency improvements. Require energy benchmarking of school buildings.
- **Establish green training programs for contractors** and building inspectors to increase knowledge of green building techniques and programs. Programs should be developed for technical high schools, community colleges, and apprenticeships and **should include support for underrepresented groups to increase their participation in the green building sector workforce**.
- **Public education** should be provided to increase the public’s understanding of energy use in buildings and inform people about programs to improve energy efficiency in their homes and businesses, **including targeted programs for low-income and BIPOC communities. Health benefits of green buildings should be promoted in educational materials.**
- **Equitable community engagement** should be prioritized to ensure that relevant stakeholders, including affected residents, are included in decision making processes about the built environment and green buildings.

BACKGROUND

Summary of Climate Impacts and Issues Affecting Connecticut

Section A provides an overview of climate impacts in Connecticut, including public health impacts. These impacts, which are projected to worsen over time, are already putting stress on the state’s infrastructure and natural ecosystems and forcing both people and wildlife to adapt.

Section B discusses key cross-cutting factors that must be considered when implementing climate policy: (1) co-benefits of climate policies such as reducing local air pollution, which can benefit public health and promote equity; (2) environmental justice and climate justice; and (3) economic implications of climate change.

A. Climate Impacts in Connecticut

It is clear that Connecticut residents and businesses are now experiencing the impacts of climate change. Our state is one of the fastest warming states in the fastest warming region of the contiguous United States, with an increase in average temperature double that of the lower 48.³⁵ And our seasons are demonstrating this change with warmer, shorter winters, and hotter, longer summers.³⁶

As a coastal state with a heavily developed shoreline, Connecticut is vulnerable to sea level rise. The increase in sea level along the Connecticut coast could be up to 20 inches (0.5 meters) by 2050.³⁷ Coastal flooding is becoming a significant concern along Long Island Sound, and the threat will become increasingly severe as sea levels continue to rise. High tide flooding has already become more common.³⁸

Connecticut has been hit hard by several major storms in the past decade, including Hurricane Irene in 2011 and Superstorm Sandy in 2012. These storms caused power outages for hundreds of thousands of Connecticut residents and imposed nearly \$3 billion in damages.³⁹ After Sandy, over 7,000 Connecticut residents filed for FEMA assistance.⁴⁰ It is only a matter of time before another major storm hits, and Connecticut’s coastline in particular is at risk:

Connecticut has the second-highest exposure of vulnerable coastal assets on the East Coast—behind only Florida—state officials said. With more than 60 percent of the state’s population living in coastal communities, 32,000 homes in the 100-year flood plain and more than \$542 billion in assets at risk, the state remains vulnerable.⁴¹

Increased precipitation also impacts the state,⁴² contributing to flooding and home and infrastructure damage (including power lines, which can be knocked down by falling tree limbs during storms). The northeast has experienced the nation's largest increase in heavy precipitation events.⁴³ Additionally, as average temperatures continue to rise, more precipitation in the region falls as rain instead of snow, causing significant year-round flood events.⁴⁴

Climate change also poses a threat to the health of Connecticut residents, especially vulnerable populations such as low-income and BIPOC communities who may lack access to quality health care and safe

housing. Disease-carrying mosquitoes are becoming more prevalent.⁴⁵ Milder winters are expected to extend the allergy season and prolong the active period of disease vectors like mosquitoes and ticks.⁴⁶ Extreme heat days are expected to increase, which can cause heat stroke and poses a particular risk to low-income residents, outdoor workers, and others who have limited access to air conditioning.⁴⁷ Flooding, which is getting worse due to climate change, also poses threats to public health in Connecticut, including transmission of bacteria and potential release of contaminants from Superfund sites.⁴⁸

B. Cross-Cutting Issues

This section briefly discusses cross-cutting issues—like co-benefits, environmental and climate justice, and economic considerations—that should be considered in the context of climate mitigation.

CO-BENEFITS OF CLIMATE MITIGATION POLICIES

The primary purpose of climate mitigation policies is to reduce human-caused contributions to climate change, generally by reducing GHG emissions. It can also be achieved by protecting and increasing carbon sinks, such as forests.

But many climate mitigation policies also provide other incidental benefits, or *co-benefits*.⁴⁹ For example, greenhouse gas regulations for power plants also reduce other types of pollution, like particulate matter, mercury, and nitrous oxides, that negatively affect human health. Reducing dependence on conventional cars can cut health-harming carbon monoxide emissions from motor vehicles. Preserving forested land not only keeps carbon sequestered in

that forest, it also preserves wildlife habitat. In contrast to the global climate benefits of mitigation policies, co-benefits are often localized.

Globally, the costs of air pollution are enormous,⁵⁰ and limiting air pollution can have huge benefits for human health. When climate mitigation policies also reduce harmful air pollution or provide other significant co-benefits, properly valuing these co-benefits “often help[s] demonstrate that the positive societal and environmental impacts of climate policy actions outweigh the costs.”⁵¹

ENVIRONMENTAL JUSTICE AND CLIMATE JUSTICE

To its credit, Connecticut is working to make environmental justice an integral part of the state's climate planning and environmental programs.⁵² For example, DEEP is expanding outreach to state-designated environmental justice communities to gain a better understanding of community concerns and increase opportunities for

meaningful public participation.⁵³ This is a positive development, though long overdue. However, sustained funding and commitment from the state will be critical in building long-term partnerships and making real progress on addressing the public health and environmental harms that these communities face.

An *environmental justice* framework acknowledges that environmental harms disproportionately burden more vulnerable people and communities, including people of color, lower-income people, and people living in poverty, and prioritizes the involvement of affected people in decision-making about their communities. For example, BIPOC communities are often located closer to major roads and industrial facilities and suffer health impacts from increased exposure to pollution. This systemic inequity—or environmental *injustice*—is deeply rooted and has not been adequately addressed, despite increasing public awareness of the problem over the past several decades.

Opportunities for meaningful involvement must be available for all people as environmental laws and policies are developed, implemented, and enforced. In practice, opportunities for participation are often limited and may be difficult to access. It is critical that opportunities for involvement are developed that take into account the needs of affected communities. This may include targeted outreach to reach people in vulnerable communities that actively solicits their participation. For example, public meetings are often held during the day when most people are at work and frequently materials are limited to English. To provide meaningful access to the process, entities could hold public meetings at night or on the weekend in a location accessible by public transit, so people who work during the day and transit users can attend. Additionally, offering materials in languages other than



English may be necessary to effectively engage with a community where a significant number of people do not speak English as their primary language.

Environmental justice not only requires public participation, it demands that all people be treated equitably under environmental laws and policies, and that disadvantaged communities not be subjected to disproportionate environmental harms. To that end, ensuring that the regulatory structure for assessing new projects is consistent with the goal of eliminating disproportionate harm is essential, as are tools like permit fees to cover costs for environmental justice programs or technical assistance to applicants and overburdened communities and providing for citizen enforcement of failure to comply with Environmental Justice and other environmental laws.

Climate justice insists that equity must be considered in the development, implementation, and enforcement of climate policies and that all people should have the opportunity for meaningful involvement.⁵⁴ It specifically acknowledges the fact that climate change disproportionately harms

the poorest and most vulnerable members of society, who generally have done the least to contribute to the problem and have the fewest resources to cope with it. For example, people in developing countries, indigenous people, racial or ethnic minorities, the poor, women, and youth are often more susceptible to climate impacts such as extreme heat, wildfires, flooding, droughts, and the spread of infectious diseases. Climate change can thereby worsen existing inequities.

Climate mitigation policies can also result in inequitable outcomes if program design does not take equity into account. For example, transitioning to a decarbonized economy will reduce employment in the fossil fuel sector, prompting calls for a “just transition” that accounts for economic impacts on workers whose jobs will be eliminated. Economic incentives, job training, tax credits, and other programs have been suggested as possible strategies to mitigate these impacts. Additionally electric vehicle incentives for new vehicles have thus far disproportionately benefited more affluent households,⁵⁵ with many lower-income people finding it difficult to afford an electric vehicle even with a rebate or tax credit. This effect can be mitigated, however, by providing rebates or tax credits for more affordable used electric vehicles, by providing enhanced incentives to moderate- or low-income (LMI) households, and by investing in electrified mobility options, such as clean transit buses, that may be more widely used. Still another example is home energy efficiency improvements. According to Efficiency For All, “Up to 30% of LMI homes have one or more health concerns such as asbestos, mold, mildew, knob-and-tube electrical wiring, and pests, which are barriers to full weatherization and lowered energy bills.”⁵⁶ This problem could be addressed by setting aside \$10 million

per year for Low Income Home Energy Assistance Program to fund weatherization and barrier remediation, providing a solution to income-eligible households where healthy-home issues hinder weatherization and energy efficiency improvements.

There are often social trade-offs in climate policy and “win-win” solutions are not always possible. But robust public participation and consideration of equity at every step of the process can inform climate policy and result in more just outcomes. As noted above in the context of environmental justice, targeted public outreach may be necessary to ensure that marginalized or vulnerable groups are included and have meaningful opportunities to participate, particularly with respect to policy decisions that directly affect them.

ECONOMIC IMPLICATIONS OF CLIMATE CHANGE

The economic implications of climate change can be loosely grouped into three major categories: (1) the cost that emitting GHGs imposes on society, (2) the economic impacts of actions taken to mitigate and adapt to climate change, and (3) climate-related disaster costs.

The social cost of carbon (SCC) is an estimate of the economic costs that would result from emitting one additional ton of GHGs⁵⁷ into the atmosphere.⁵⁸ The SCC can be measured in dollars or other currency. It is often used in regulatory cost-benefit analysis so policymakers and the public can better understand the social costs of policies that would increase GHG emissions, and the benefits of policies that would decrease emissions.

Pricing carbon. Pollution is a classic example of a negative externality. Because the market does not price pollution, more pollution is produced than is optimal and negatively affects society. To cost-effectively

reduce GHG emissions, many economists support pricing carbon (and other GHGs) to make polluters, instead of the public, shoulder the cost of the emissions they produce. The World Bank explains:

A price on carbon helps shift the burden for the damage back to those who are responsible for it, and who can reduce it. Instead of dictating who should reduce emissions where and how, a carbon price gives an economic signal and polluters decide for themselves whether to discontinue their polluting activity, reduce emissions, or continue polluting and pay for it. In this way, the overall environmental goal is achieved in the most flexible and least-cost way to society.⁵⁹

Carbon and other GHGs can be priced directly via a carbon tax, or they can be covered under a cap-and-trade system that caps overall emissions and decreases over time. Under a cap-and-trade system, covered entities must reduce their emissions or pay for emissions allowances to ensure that they comply with the cap.

Cost-benefit analysis is commonly used to assess the costs and benefits of government regulations, including climate policies. The social cost of carbon is often used in cost-benefit analysis for policies that would increase or decrease GHG emissions. Co-benefits may also be considered in cost-benefit analysis, although some co-benefits are difficult to quantify and therefore may not be fully considered. Costs of compliance, such as the cost to a facility to install new pollution control equipment, are also taken into account.

Climate-related disaster costs. Climate change has already increased the likelihood of extreme weather events such as hurricanes and wildfires, and other natural disasters like flooding. It is a risk amplifier,

increasing the chances both that natural disasters will strike and that they will be more severe. Unfortunately, these disasters come with a hefty price tag. In September 2020, NPR reported that “in the last five years, the U.S. has experienced more than \$500 billion ... in losses directly from climate-fueled weather disasters.”⁶⁰

The National Centers for Environmental Information (NCEI) hosts an online dashboard that provides information about billion-dollar climate and weather disasters in the United States. The overall cost of these disasters since 1980 “exceeds \$1.825 trillion.”⁶¹ The costs of such disasters are projected to increase as climate impacts become more severe. The data already indicates that major climate-related disasters are becoming the norm rather than the exception.⁶² And things are only getting worse: in 2020, the United States “obliterated the record” for the most billion-dollar climate-related disasters.⁶³ Wildfires, hurricanes, tornadoes, and other disasters cost the United States a staggering \$95 billion in 2020, nearly double the costs of 2019.⁶⁴

Economic impacts of actions to mitigate and adapt to climate change. Climate policies have economic impacts and can affect jobs, economic growth, and other metrics. For example, regulating GHGs from power plants makes cleaner plants more competitive in the market, providing an incentive for more heavily polluting facilities to invest in pollution control technology. Climate policies (e.g., green stimulus spending and jobs programs) can result in both direct economic benefits and co-benefits. For example, reducing air pollution can improve public health, reducing the number of sick days that people need to stay home from work or school.

There has been “significant long-term decoupling of economic growth and carbon pollution” in Connecticut: the state economy

has grown over the past several decades even as GHG emissions declined.⁶⁵ Moreover, recent economic analysis for Connecticut found that implementing climate actions recommended by the Governor’s Council on Climate Change to meet the state’s GHG reduction goals would *benefit* the state’s economy over the next decade:

Meeting Connecticut’s near- and long-term GHG emission reduction targets will have a small net positive economic impact. Economic analysis of the 45 percent reduction by 2030 scenario concluded there will be a small net positive impact on employment levels (0.9% per year) and state GDP (0.62% per year) from 2020 to 2030.⁶⁶

Notably, this analysis did not consider “the positive co-benefits of improved health and averted environmental damage”⁶⁷ of the recommended mitigation policies and therefore underestimates the benefits of these policies. The evidence so far indicates

that Connecticut’s climate actions have not harmed the state’s economy, and in fact are likely to produce net economic benefits, as well as additional co-benefits (although these have not been quantified or assessed).

Implementing forward-looking climate policies has the potential to provide new job training for a more equitable workforce; to create local, green jobs; to accelerate the clean energy economy; and to facilitate access to federal funding and incentive programs. For example, building transmission infrastructure for offshore wind or installing a utility-scale solar project can create construction jobs that often favor local workers. It is also important to provide families, businesses, nonprofits, and municipalities with access to green financing opportunities, including programs specifically tailored for low-income families. The Connecticut Green Bank implements innovative financing solutions to facilitate the growth of renewable energy and energy efficiency upgrades in Connecticut.



Endnotes

Overview

1. Ambarish V. Karmalkar & Raymond S. Bradley, *Consequences of Global Warming of 1.5°C and 2°C for Regional Temperature and Precipitation Changes in the Contiguous United States*, PLOS ONE 12(1), Jan. 2017, pubmed.ncbi.nlm.nih.gov/28076360/
2. Abby Weiss, *Fading Winters, Hotter Summers Make the Northeast America’s Fastest Warming Region*, INSIDE CLIMATE NEWS (2020), insideclimatenews.org/news/27062020/hotter-summer-northeast-united-states-warming/5
3. Governor’s Council on Climate Change, *Building a Low Carbon Future for Connecticut, GHG Reduction Strategies and Recommendations at 2* (December 2018) [hereinafter *2018 GC3 Recommendations Report*], portal.ct.gov/-/media/DEEP/climatechange/publications/BuildingaLowCarbonFutureforCTGC3Recommendationspdf.pdf
4. *Id.*
5. Anji Seth et al., *Connecticut Physical Climate Science Assessment Report: Observed trends and projections of temperature and precipitation*, CIRCA Report, at 28 (August 2019), circa.uconn.edu/wp-content/uploads/sites/1618/2019/08/CTPCSAR-Aug2019.pdf; Ellen L. Mecray et al., *Impacts, Risks, and Adaptation in the United States: Fourth National Climate Assessment, Volume II* (2018), nca2018.globalchange.gov/downloads/NCA4_Ch18_Northeast_Full.pdf; See also Governor’s Council on Climate Change, *Taking Action on Climate Change and Building a More Resilient Connecticut for All*, at 30 (January 2021) [hereinafter *GC3 Phase 1 Report*] (noting that Connecticut’s temperature is rising more than the global average and that, consequently, a global target of 2.0°C increase will result in temperatures beyond that target in Connecticut).
6. Conn. Gen. Stat. §22a-200a (amended 2018).
7. See Connecticut Department of Energy & Environmental Protection, *Climate Change*, portal.ct.gov/DEEP/Climate-Change/Climate-Change
8. Connecticut Department of Energy and Environmental Protection, *2018 Connecticut Greenhouse Gas Emissions Inventory*, at 2 (2021) [hereinafter *2018 CT GHG Inventory*], portal.ct.gov/-/media/DEEP/climatechange/GHG_Emissions_Inventory_2018.pdf
9. *Id.* at 10.
10. See Policy Rubrics Appendices [page 54].

Cross-Sector Policy Action Plan

11. Conn. Gen. Stat. §22a-16.
12. See Conn. Gen. Stat. §2-24a (establishing requirement of fiscal notes and ratepayer impact statements for certain bills).

Electricity Policy Action Plan

13. The Conservation and Load Management Fund, the Connecticut Clean Energy Fund, and RGGI revenue, www.cga.ct.gov/2018/rpt/pdf/2018-R-0304.pdf
14. Conn. Gen. Stat. §16a-3n.
15. In addition to the 804 MW Vineyard Wind project, Connecticut previously procured 304 MW of the Revolution Wind offshore wind project outside the scope of that specific authorizing legislation (the project will also provide 400 MW to Rhode Island), portal.ct.gov/DEEP/News-Releases/News-Releases---2020/DEEP-Selected-Power-Purchase-Agreement-for-804-MW-Offshore-Wind-Project-Filed-with-PURA
16. See New England States Committee on Electricity, *New England States’ Vision for a Clean, Affordable, and Reliable 21st Century Regional Electric Grid* (October 16, 2020); New England States Committee on Electricity, *Report to The Governors: Advancing the Vision* (June 29, 2021), newenglandenergyvision.files.wordpress.com/2021/06/advancing-the-vision-report-to-governors-2.pdf

Transportation Policy Action Plan

17. See Conn. Gen. Stat. §22a-201c.
18. See Office of Fiscal Analysis, *Fiscal Note for HB-7424 An Act Concerning the State Budget for the Biennium Ending June Thirtieth, 2021, and Making Appropriations Therefor, and Implementing Provisions of the Budget*, as amended by House “A” (LCO 10581), House “B” (LCO 10618), at 20, www.cga.ct.gov/2019/FN/pdf/2019HB-07424-R01-FN.pdf

Buildings Policy Action Plan

19. Helen Gronli, et al., *Feasibility of Renewable Thermal Technologies in Connecticut – Barriers and Drivers* (March 2017), available at FORTT_Barrriers and Drivers.pdf (yale.edu), cbey.yale.edu/research/feasibility-of-renewable-thermal-technologies-in-connecticut-barriers-and-drivers
20. See Conn. Gen. Stat. §16-99ww

21. United States Department of Housing and Urban Development, *Affordable Green: Renewing the Federal Commitment to Energy-Efficient, Healthy Housing* (December 2012), available at Microsoft Word - Y-HQ-02635 Affordable Green Report EXEC SEC - Final 12 20 12 (hud.gov), www.hud.gov/sites/documents/OSHCENERGYREPORT2012.PDF

**Job Creation Opportunities:
Expanding Connecticut's Climate Policies**

22. Note that the results represent *gross* impacts rather than *net* impacts. We provide the positive incremental jobs associated with each of the policies, but we do not calculate any job losses that may be an indirect effect of the policy.

Four-Step Accountability Agenda for Connecticut Legislators

23. *2018 CT GHG Inventory*, *supra* note 8, at 5.

Background: Policy Rubrics

24. See Appendix Rubrics A–K, Equity Principles, and Health Principles.
25. See *CT Not on Track to Meet Statutory Emissions Targets, New Greenhouse Gas Inventory Finds*, CONN. DEPT of ENERGY and ENV'T PROT. (Sept. 7, 2021), portal.ct.gov/DEEP/News-Releases/News-Releases---2021/CT-Not-on-Track-to-Meet-Statutory-Emissions-Targets---New-Greenhouse-Gas-Inventory-Finds
26. When considering the combined residential and commercial building sector emissions. *2018 CT GHG Inventory*, *supra* note 8, at 5.
27. See Connecticut Department of Energy and Environmental Protection, *2020 Integrated Resources Plan*, at 140 (October 2021).
28. *2018 CT GHG Inventory*, *supra* note 8.
29. *Transportation and Climate Initiative Program Memorandum of Understanding* at 5 (December 2020), www.transportationandclimate.org/sites/default/files/TCI%20MOU%2012.2020.pdf
30. California Air Resources Board, *States that have Adopted California's Vehicle Standards under Section 177 of the Federal Clean Air Act*, ww2.arb.ca.gov/sites/default/files/2019-10/ca_177_states.pdf
31. See Public Utilities Regulatory Authority, Docket No. 17-12-03RE04, *PURA Investigation into Distribution System Planning of the Electric Distribution Companies—Zero Emission Vehicles, Final Decision* (July 14, 2021), portal.ct.gov/PURA/Electric/Grid-Modernization/Grid-Modernization
32. Conn. Gen. Stat. §22a-202.
33. Conn. Gen. Stat. §4a-67d; Conn. Exec. Order No. 21-3 (December 16, 2021), portal.ct.gov/-/media/Office-of-the-Governor/Executive-Orders/Lamont-Executive-Orders/Executive-Order-No-21-3.pdf
34. *2018 CT GHG Inventory*, *supra* note 8 (2021).

Background: Summary of Climate Impacts and Issues Affecting Connecticut

35. Abby Weiss, *Fading Winters, Hotter Summers Make the Northeast America's Fastest Warming Region*, INSIDE CLIMATE NEWS (2020), insideclimatenews.org/news/27062020/hotter-summer-northeast-united-states-warming/
36. Anji Seth et al., *Connecticut Physical Climate Science Assessment Report: Observed trends and projections of temperature and precipitation*, CIRCA Report at 28 (August 2019), circa.uconn.edu/wp-content/uploads/sites/1618/2019/08/CTPCSAR-Aug2019.pdf; Ellen L. Mecray et al., *Impacts, Risks, and Adaptation in the United States: Fourth National Climate Assessment, Volume II* (2018), nca2018.globalchange.gov/downloads/NCA4_Ch18_Northeast_Full.pdf; See also *GC3 Phase 1 Report*, *supra* note 5, at 30 (noting that Connecticut's temperature is rising more than the global average and that, consequently, a global target of 2.0°C increase will result in temperatures beyond that target in Connecticut).
37. *GC3 Phase 1 Report*, *supra* note 5, at 29.
38. Laura Bozzi & Robert Dubrow, Yale Center on Climate Change and Health, *Climate Change and Health in Connecticut: 2020 Report* at 7 (2020), ysph.yale.edu/yale-center-on-climate-change-and-health/YCCCCH_CCHC2020Report_395366_5_v1.pdf
39. NOAA Nat'l. Ctr. for Env't. Info., *Billion-Dollar Weather and Climate Disasters*, www.ncdc.noaa.gov/billions/
40. John Burgeson & Genevieve Reilly, *Rising Above the Tide: 5 Years Since Sandy*, CT POST (Oct. 28, 2017), www.ctpost.com/local/article/Rising-above-the-tide-5-years-since-Sandy-12313727.php
41. *Id.*
42. D.R. Easterling et al., *Precipitation Change in the United States*, in *Climate Science Special Action Plan: Fourth National Climate Assessment, Volume I*, NAT. AERONAUTICS & SPACE ADMIN. GODDARD INST. FOR SPACE STUD., pubs.giss.nasa.gov/abs/ea02000c.html
43. *Id.*
44. *Id.*
45. Bozzi & Dubrow, *supra* note 38, at 8.
46. *Id.* at 8-9.
47. *Id.* at 6.
48. *Id.* at 7.
49. *Health Co-benefit of Climate Action*, WORLD HEALTH ORG., www.who.int/activities/building-capacity-on-climate-change-human-health/toolkit/cobenefits; *The Co-benefits of Climate Change Mitigation*, UNITED NATIONS ECON. COMM'N. FOR EUROPE, www.unece.org/fileadmin/DAM/Sustainable_Development_No._2_Final_Draft_OK_2.pdf

50. World Bank Group & Institute for Health Metrics and Evaluation, *The Cost of Air Pollution: Strengthening the Economic Case for Action* (2016), documents1.worldbank.org/curated/en/781521473177013155/pdf/108141-REVISED-Cost-of-PollutionWebCORRECTEDfile.pdf
51. *2018 GC3 Recommendations Report*, *supra* note 3, at 15.
52. See *GC3 Phase 1 Report*, *supra* note 5, at 19-27.
53. See Connecticut Department of Energy and Environmental Protection, *Environmental Justice*, portal.ct.gov/DEEP/Environmental-Justice/Environmental-Justice
54. Daisy Simmons, *What is 'Climate Justice'?*, YALE CLIMATE CONNECTIONS (July 29, 2020), yaleclimateconnections.org/2020/07/what-is-climate-justice/
55. Stephen Edelstein, *Most Electric-Car Tax Credits Benefit Highest-Income Households*, GREEN CAR REPORTS (September 8, 2015), www.greencaractionplans.com/news/1099916_most-electric-car-tax-credits-benefit-highest-income-households
56. Efficiency For All, *Addressing Health and Affordability Challenges for Low-Income Families*, WORDPRESS (March 1, 2021) (Based on Energize CT data on homes barriered from weatherization in CT (2017-2019)); presented by E4 the Future, Efficiency For All, and The Building Performance Association (2021), efficiencyforall.org/wordpress/2021/03/01/addressing-health-and-affordability-challenges-for-low-income-families/
57. The social cost of carbon, despite its name, is not limited to carbon dioxide. Other types of GHGs with a different global warming potential than carbon dioxide can be converted into their carbon dioxide equivalent (CO2e) and included in the same analysis. *Environmental Protection Agency Factsheet: Social Cost of Carbon*, www.epa.gov/sites/default/files/2016-12/documents/social_cost_of_carbon_fact_sheet.pdf
58. Renee Cho, *Social Cost of Carbon* (April 1, 2021), news.climate.columbia.edu/2021/04/01/social-cost-of-carbon/; *Resources for the Future Social Cost of Carbon 101* (February 3, 2022), www.rff.org/publications/explainers/social-cost-carbon-101/
59. World Bank, *Pricing Carbon*, www.worldbank.org/en/programs/pricing-carbon
60. NPR, *What Are the Costs of Climate Change?* (September 16, 2020), www.npr.org/2020/09/16/913693655/what-are-the-costs-of-climate-change
61. NOAA Nat'l. Ctr. for Env't. Info., *Billion-Dollar Weather and Climate Disasters*, www.ncdc.noaa.gov/billions/
62. NOAA Nat'l. Ctr. for Env't. Info., *Billion Dollar Disasters*, ("2020 is the sixth consecutive year (2015-2020) in which 10 or more billion-dollar weather and climate disaster events have impacted the United States."), www.ncdc.noaa.gov/billions/time-series

63. Seth Borenstein, *The Stormy, Fiery Year when Climate Disasters Wouldn't Stop*, ASSOCIATED PRESS (December 10, 2020), apnews.com/article/pandemics-wildfires-climate-change-floods-arctic-18b9a80f52d81adf64e36b55d73ab728
64. Christopher Flavelle, *U.S. Disaster Costs Doubled in 2020, Reflecting Costs of Climate Change*, NY TIMES (January 7, 2021), www.nytimes.com/2021/01/07/climate/2020-disaster-costs.html
65. *2018 GC3 Recommendations Report*, *supra* note 3, at 9.
66. *2018 GC3 Recommendations Report*, *supra* note 3, at 13. This analysis focused on 2020-2030 because there is substantial uncertainty beyond this timeframe; Stanley McMillen, *The Economic and Fiscal Impacts of Connecticut's Greenhouse Gas Reduction Strategies* (2018), at 1, portal.ct.gov/-/media/DEEP/climatechange/REMIpdf.pdf
67. Stanley McMillen, *The Economic and Fiscal Impacts of Connecticut's Greenhouse Gas Reduction Strategies* (2018), at 35, portal.ct.gov/-/media/DEEP/climatechange/REMIpdf.pdf

The Policy Rubrics Appendices

Appendices are online only at: www.savethesound.org/CTClimateActionPlan

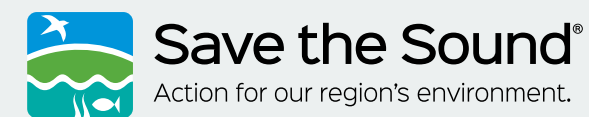
- APPENDIX A: TRANSPORTATION—VEHICLES**
www.savethesound.org/wp-content/uploads/2022/04/Climate-Action-Plan_Appendix-A-Transportation-Vehicles-Rubric-Final.pdf
- APPENDIX B: TRANSPORTATION—PUBLIC TRANSPORTATION**
www.savethesound.org/wp-content/uploads/2022/04/Climate-Action-Plan_Appendix-B-Transportation-Public-Transportation-Rubric-Final.pdf
- APPENDIX C: TRANSPORTATION—ROADS**
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- APPENDIX D: TRANSPORTATION—FUEL TYPE**
www.savethesound.org/wp-content/uploads/2022/04/Climate-Action-Plan_Appendix-D-Transportation-Fuel-Type-Rubric-Final.pdf
- APPENDIX E: ELECTRICITY—RENEWABLE ENERGY**
www.savethesound.org/wp-content/uploads/2022/04/Climate-Action-Plan_Appendix-E-Electricity-Renewable-Energy-Rubric-Final.pdf
- APPENDIX F: ELECTRICITY—ENERGY EFFICIENCY**
www.savethesound.org/wp-content/uploads/2022/04/Climate-Action-Plan_Appendix-F-Electricity-Energy-Efficiency-Rubric-Final.pdf
- APPENDIX G: ELECTRICITY—COMMUNITY ENERGY**
www.savethesound.org/wp-content/uploads/2022/04/Climate-Action-Plan_Appendix-G-Electricity-Community-Energy-Rubric-Final.pdf
- APPENDIX H: ELECTRICITY—UTILITIES**
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- APPENDIX I: BUILDINGS—RESIDENTIAL**
www.savethesound.org/wp-content/uploads/2022/04/Climate-Action-Plan_Appendix-I-Buildings-Residential-Final.pdf
- APPENDIX J: BUILDINGS—COMMERCIAL**
www.savethesound.org/wp-content/uploads/2022/04/Climate-Action-Plan_Appendix-J-Buildings-Commercial-Final.pdf
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www.savethesound.org/wp-content/uploads/2022/04/Climate-Action-Plan_Appendix-K-Buildings-Government-Final.pdf
- EQUITY PRINCIPLES**
www.savethesound.org/wp-content/uploads/2022/04/Climate-Action-Plan_Equity-Principles.pdf
- PUBLIC HEALTH PRINCIPLES**
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