

Strategies to Help Connecticut Achieve HB 5600's Mandatory Carbon Cap

Excerpts from ENE's Climate Roadmap



**Environment
Northeast**

Global warming and its many impacts are increasingly evident around the world, and in our state. Scientists agree that we must reduce global warming pollution 75 to 80 percent by mid-century to prevent the most calamitous effects of climate change.

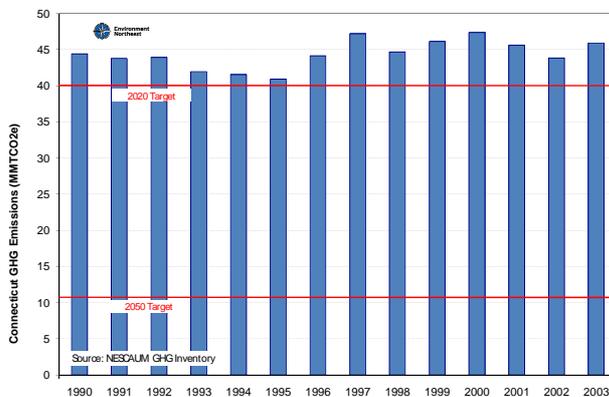
Connecticut has long been a leader in acting to cut global warming pollution:

- In 2004, the General Assembly passed *An Act Concerning Climate Change* (PA 04-252) which created a framework for action on global warming. PA 04-252 set a goal of reducing Connecticut's emissions to 1990 levels by 2010, 10 percent below 1990 by 2020, and 75 percent or more by 2050.
- The state has adopted some key components of its 2005 Climate Change Action Plan, including participation in the Regional Greenhouse Gas Initiative (RGGI), and adoption of California's LEVII and Pavley auto emission (clean car) standards.
- Last June Connecticut passed PA 242, *An Act Concerning Electricity and Energy Efficiency*, which includes sweeping reforms to ramp up efficiency investments.

A Mandatory Cap on Global Warming Pollution is Necessary

Despite the important steps Connecticut has taken, existing policies will not enable the state to meet its near-term goal of reducing emissions 10 percent below 1990 levels by 2020. As shown in Figure 1, Connecticut emissions in 1990 were 44.4 million metric tons CO₂ equivalent (MMTCO₂E), which means that by 2020, emissions in the state should be 40 MMTCO₂E. As of 2003, emissions are 45.9 MMTCO₂E.

Figure 1: Connecticut's Total GHG Emissions by Year from 1990 to 2003:

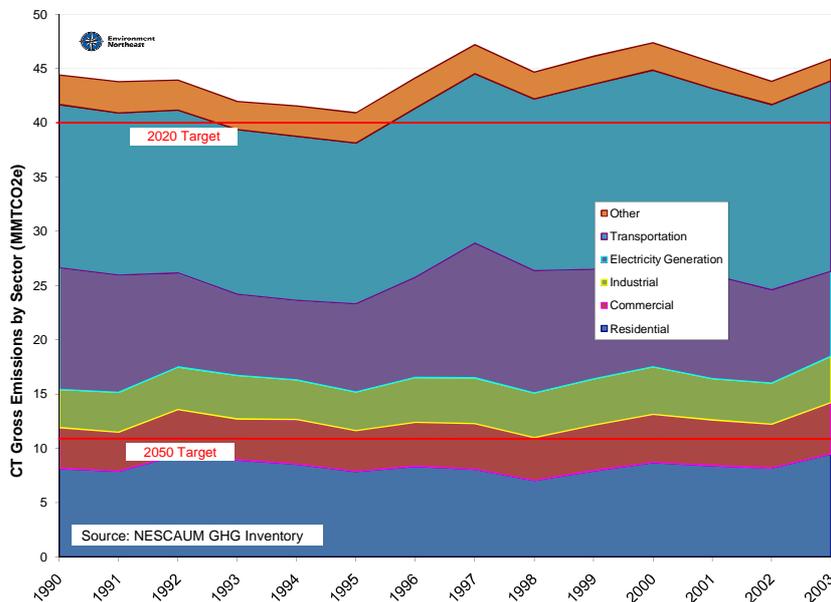


Connecticut must meet its 10 percent reduction goal by 2020 if it hopes to achieve its longer term goal. To do this, the state should institute a mandatory, enforceable statewide cap on global warming pollution, define near-term implementation steps that will help achieve that cap, and develop new strategies that will ensure that future actions will continue to sufficiently reduce emissions. HB 5600, *An Act Concerning Global Warming Solutions*, sets a course to ensure that Connecticut meets its 10 percent reduction goal by 2020.

Measuring Connecticut's Progress on Global Warming with ENE's Climate Roadmap

Environment Northeast (ENE) developed the *Climate Change Roadmap for New England and Eastern Canada*, a comprehensive, first-ever regional strategy for achieving a 75 percent reduction in carbon emissions by mid-century that expanded on ENE's earlier *Climate Change Roadmap for Connecticut*. ENE developed the regional Roadmap to help individual states and the region achieve the greenhouse gas reductions agreed to by the New England Governors and Eastern Canadian Premiers in 2001. Using ENE's 2007 regional Roadmap as a framework for assessing Connecticut's progress, the following summarizes the greenhouse gas (GHG) reducing policies Connecticut has adopted, and outlines the additional steps that must be taken—many of which are incorporated into HB 5600.

Figure 2: Connecticut's Greenhouse Gas Emissions by Sector from 1990 to 2003



As shown above, while numerous factors and activities contribute to rising GHG emissions, the three most significant sources in the state are: 1) electric power generation (17%); 2) building systems which account for a significant portion of residential (21%), commercial (10%) and industrial (9%) emissions; and 3) transportation (38%). ENE's *Climate Change Roadmap* identified 10 priority solutions that would enable individual states and the region to significantly reduce their GHG emissions in each of these sectors. The solutions are grouped into three broad categories: energy, transportation and sequestration (or carbon capture and storage). In addition to reducing global warming, the recommended policies have numerous economic, health and environmental benefits including job creation, economic competitiveness and cleaner air and water. For each

priority solution this report summarizes the steps Connecticut has already taken, the remedies that are pending, and whether these outstanding remedies are incorporated into HB 5600.

Energy	Transportation	Sequestration
Priority 1 – Invest in Energy Efficiency Resources	Priority 6 – Transition to No-Carbon or Low-Carbon Transportation Fuels	Priority 9 – Sequester Carbon in Terrestrial Sinks (Forests and Agriculture)
Priority 2 – Increase Energy Efficiency of Buildings	Priority 7 – Reduce Greenhouse Gas Emissions from Light-Duty Vehicles	Priority 10 -- Capture and Store of Carbon Dioxide from Energy and Industrial Sources
Priority 3 – Increase Energy Efficiency of Appliances	Priority 8 – Reduce Emissions from Heavy-Duty Vehicles	
Priority 4 – Reduce Emissions from Large Stationary Sources		
Priority 5 – Commercialize and Deploy No-Carbon and Low-Carbon Energy Sources		

1. Invest in Energy Efficiency Resources

Connecticut already has some of the best electric efficiency programs in the nation but analysis done by the state Energy Conservation Management Board in 2007 concluded that a far greater investment is economically justified. With the passage of PA 242 the state has directed the utilities to invest in all cost effective efficiency; as a result the utilities have proposed tripling energy efficiency investments over the next 5 years. PA 242 also calls for increased natural gas efficiency investments and established the first in the nation fuel oil conservation programs. Attention at this point should be focused on assuring the implementation of the legislature’s directives in this forward looking legislation.

2. Increase Energy Efficiency of Buildings

PA 242 also adopted the latest International Energy Conservation Code (IECC) Building Codes and required that the energy part of the State’s commercial building code be 20% more energy efficient than the IECC’s codes. HB 5600 would make adoption of the latest codes an automatic process thereby guaranteeing that Connecticut residents are immediately getting the benefits of better building techniques. The proposed legislation also includes the *Roadmap*’s recommendation to establish a rigorous enforcement program to assure that the advanced energy components of building code are enforced.

3. Increase Energy Efficiency of Appliances

PA 242 included the latest appliance efficiency standards and HB 5600 would require the State to adopt California’s updates to existing standards and any standards they adopt for additional appliances and equipment.

4. Reduce GHG Emissions from Large Stationary Sources (i.e., power plants and industrial facilities)

As a RGGI signatory, Connecticut is part of the first mandated carbon cap and trade program in the nation. RGGI is designed to reduce carbon dioxide emissions from large electric power plants 10 percent by 2018 in ten Northeastern and Mid-Atlantic states. Individual power plants will have to obtain a permit for every ton of carbon dioxide emitted. The permits will be sold in a regional auction, beginning this year. Policy makers' attention needs to be focused on assuring RGGI's timely implementation and the allocation of Connecticut's auction revenues to energy efficiency and other public benefit uses, including renewable energy investments. HB 5600 includes two other ENE Roadmap policy recommendation related to stationary sources: a) establish a comprehensive GHG emissions registry for state based sources over 10,000 tons and b) explore other market-based mechanisms, such as a cap and trade program, for other non-RGGI facilities (e.g. smaller power plants and large industrials).

5. Commercialize and Deploy No-Carbon and Low Carbon (Clean) Energy Sources

Specific *ENE Roadmap* recommendations in this area include a) Commercialize and Deploy more Renewable Energy; b) Promote Public Support for Clean Energy Systems; c) Promote Clean, High Efficiency Electric Generation and d) Improve Grid Access for Clean Distributed Generation, (small-scale power generation technologies located close to where electricity is used, such as a home or business, that enhance or provide an alternative to the traditional electric power system.) The state's Clean Energy Fund was established to promote the commercialization and deployment of clean energy resources and has made significant investments since its inception. Attention should be given to assuring that the fund's sizable assets are being efficiently and effectively used to bring renewable energy projects to fruition and thus help the state meet its ambitious renewable portfolio standard requirements.

6. Transition to No-Carbon or Low-Carbon Transportation Fuels

HB 5600 directs the Office of Policy and Management (OPM) in conjunction with the Department of Transportation (DOT) and the Department of Environmental Protection (DEP) to work with California and other jurisdictions to develop a declining net greenhouse gas fuel standard. The standard would require a full lifetime analysis that assesses *“all stages of fuel and feedstock production and distribution, from feedstock generation or extraction to distribution, delivery and use of the finished fuel to the ultimate consumer, and (that) shall adjust the mass values for all greenhouse gas emissions relative to such emissions' relative global warming potential.”* Numerous proposed bills this legislative session are consistent with the ENE Roadmap's recommendation to support development of low GHG biofuels in CT that meet or exceed a high threshold standard through tax policy and direct grants provided that such fuels are evaluated in accordance with the criteria laid out in HB 5600.

7. Reduce GHG Emissions from Light Duty Vehicles

While HB 5600 directs OPM and DOT to initiative further investigation of expanding large scale passenger and freight rail as well as the *ENE Roadmap's* other recommendations in this area, specific action is required if the following recommendations are to be achieved: a) Increase availability of

Mass Transit to Reduce Vehicle Miles Traveled (VMT)(specifically the state should expedite development of New Haven – Springfield line); b) Adopt Transit Oriented Development Requirements and Incentives; c) Require alternative scenario analyses for state Transportation Improvement Plans (TIPS) and Long Range Transportation Plans (LRTPs). Connecticut’s sales tax exemption for vehicles getting over 40 mpg provides a significant incentive for consumers to purchase low emitting vehicles and the while state fleet includes some low emitting vehicles, it can and should do more to reduce the emissions from its transportation fleet.

8. Reduce Emissions from Heavy Duty Vehicles

In addition to the freight rail expansion which should switch some of the freight from trucks to rail, HB 5600 requires that the DOT incorporate carbon emissions into planning and review of transportation investments. Since heavy duty vehicles are primarily fueled by diesel, the ENE Roadmap also recommends that off-road construction equipment, marine vehicles, waste haulers, school buses and transit buses be retrofit with pollution control devices that can significantly reduce diesel pollution emissions. Diesel pollution is not only toxic, but it contains black carbon which has a global warming potential 600 times greater than that of carbon dioxide. Plug-in stations for trucks at rest areas and anti-idling measures can also reduce emissions. Last year, the Connecticut Legislature signaled its commitment to reducing diesel emissions in the state by appropriating \$10 million from the general fund to retrofit all full-size school buses in the state. Retrofitting these buses with pollution control equipment will reduce the serious negative health and economic impacts of diesel emissions on our most vulnerable population. In addition, \$5 million in the bonding package is authorized for retrofitting the state’s transit buses. These actions constitute a major commitment to cleaning up the state’s fleet of existing diesel vehicles.

9. Sequester Carbon in Terrestrial Sinks

Although HB 5600 would require state funded development projects to offset any carbon loss associated with the removal of forests and associated soils and biomass, Connecticut is not well suited to become a significant place for carbon sequestration. It can and should, however, seek to eliminate--to the greatest extent possible--further carbon emissions as a result of development. The model global warming zoning ordinance that HB 5600 directs OPM and DEP to develop is a step in the right direction but its benefit will depend on its adoption by the state’s municipalities. In addition, proper management of state lands is important to ensure forest health and resiliency, and conduct management activities to increase sequestration.

10. Capture and Store of Carbon Dioxide from Energy and Industrial Sources

The ENE Roadmap recommends that the Administration pursue the study of capture and storage of carbon dioxide from energy and industrial sources through the RGGI process or NEG Association. This study would include both a regional inventory of sources and potential storage locations, and a pilot project to demonstrate specifically how CO2 capture, transportation and storage would work in the region.

Conclusion

As with most complex issues, Connecticut's economic and environmental future will be better served by embracing the challenge of climate change directly. Connecticut has long been a leader in identifying environmental challenges and developing and implementing policies to address them. As early as 1990, it adopted its first *AAC Global Warming* (PA 90-219) which mandated that the State purchase energy efficient vehicles and appliances, revised the building code, and established goals for improving public transportation that the DOT was required to monitor. In 1991 the legislature passed an *Act Concerning Global Climate Change* (PA 91-395) that sought to address the GHG emission implications of sprawling development, and beginning in 1993 required the Office of Policy and Management to report annual net carbon emissions and to set a goal for their reduction in the State Plan of Conservation and Development.

Passage this session of *AAC Connecticut Global Warming Solutions* HB 5600 would build on the state's earlier commitments to combat global warming and constitutes a critical next step for the state to ensure that it achieves the reductions necessary to avoid the worst impacts of global warming. Despite the significant actions already taken, the resulting emission reductions fall far short of where Connecticut needs to be to reach its 2020 target. To succeed in achieving the magnitude of needed reductions, the state must implement an array of policies that will include all sectors of the economy. Adoption of measures such as those in HB 5600, in conjunction with requiring state agencies to develop additional policies to address emissions under their jurisdiction, positions the state on a path to meet the 2020 reductions which in turn puts Connecticut on a trajectory to achieve a 75 to 80% reduction by mid-century.



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Environment Northeast is a nonprofit research and advocacy organization focusing on the Northeastern United States and Eastern Canada. Our mission is to address large-scale environmental challenges that threaten regional ecosystems, human health, or the management of significant natural resources. We use policy analysis, collaborative problem solving, and advocacy to advance the environmental and economic sustainability of the region.