



Connecticut Climate Change

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Challenges and Accomplishments in Implementing Connecticut's Climate Change Action Plan: Progress Made in 2007

INTRODUCTION

2007 was a year of escalating concern about impacts and acknowledgement of the magnitude of human-caused changes to the earth's climate. The Intergovernmental Panel on Climate Change released its Fourth Assessment report, stating that "warming of the climate system is unequivocal" and that "most of the observed increase in globally-averaged temperature since the mid-20th century is *very likely* due to the observed increase in anthropogenic GHG [greenhouse gas] concentrations."¹ At the same time, 2007 saw ever-increasing awareness and action on climate change: the award of the Nobel Peace Prize to the thousands of scientists on the Intergovernmental Panel on Climate Change along with Al Gore, eco-themed shows on major media networks and "green" issues of mainstream magazines, the continued greening of Wal-Mart, pledges by Yahoo to become carbon neutral and Google to invest hundreds of millions of dollars to develop renewable energy that is cheaper than coal, state commitments on climate action growing from a handful of New England and West coast states to include the mid-West, and momentum in Congress to pass meaningful federal climate legislation.

In Connecticut, we continue to make progress on climate solutions. The 2007 Connecticut General Assembly overwhelmingly passed ground breaking energy legislation that: requires energy efficiency to be treated as a resource of first choice in the new process created to procure electricity supply, increases the amount of clean energy in our grid, creates a home heating oil efficiency program, and expands appliance efficiency standards. The General Assembly, as part of this energy legislation, also directed the Department of Environmental Protection (DEP) to adopt regulations to implement the Regional Greenhouse Gas Initiative (RGGI) in Connecticut and directed the distribution of Connecticut carbon dioxide allowances via auction. As a result, RGGI moved closer to implementation in Connecticut with the release of proposed regulations for public comment in December. At the local level, Connecticut campuses, towns, businesses, schools, faith communities, and individuals are embracing aggressive programs to increase energy efficiency and reduce greenhouse gas emissions. The Governor's Steering Committee on Climate Change has worked to re-engage all of these stakeholders in dialogue, planning, and action towards meeting our long-term goals of 75-85% reductions to stabilize our climate.

¹ The IPCC Fourth Assessment Report (AR4), November 2007.

This progress is significant but not sufficient. While Connecticut has been a leader in responding to climate change and developing progressive public policy, our statewide greenhouse gas emissions continue to grow. Our initiatives are providing models for climate action by other states and the nation, but the scale of reductions required to stabilize climate is so great that our current efforts will only help slow the rate of growth in emissions. In order to actually reverse the GHG growth curve and attain levels required to stabilize climate, Connecticut will need to decrease GHG emissions by more than one million metric tons per year for over 40 years. That is equivalent to the emissions from electricity used by over 137,000 homes *each year* or the emissions from over 190,000 passenger vehicles *each year*. Moreover, climate scientists agree that aggressive reductions need to occur within the next decade to stabilize the earth's climate. The magnitude and the urgency of the required greenhouse gas reductions are daunting.

We approach our 2010 and 2020 targets with cautious optimism, acknowledging the progress we have made in the past five years and knowing this effort is contributing to the foundation for meaningful national action on climate change. However, we are also acutely aware of the commitment, creativity, and resources needed to meet the challenges of ever increasing GHG emissions and the approaching target dates. Clearly, a robust national climate change program is vital to augment state progress and attain long-term climate stabilization goals.

This report summarizes the challenges ahead and the highlights of climate action in Connecticut in 2007. The last section, "Photo Album of Connecticut Climate Change Solutions, 2007," shows some of the many climate change solutions happening throughout the state. All of this information and additional detail on the implementation status of individual actions in the Connecticut Climate Change Action Plan is also available at www.ctclimatechange.com.

CHALLENGES AHEAD

Reversing Growth in Key Areas

Connecticut's greenhouse gas emissions continue to rise. Although we have slowed the rate of growth through the many initiatives described in this report, we rely on increasing amounts of fossil fuel for energy and transportation. Two key areas of continued growth in greenhouse gas emissions are from increasing vehicle miles traveled (VMT) and rising energy demand. Connecticut's increasingly cleaner cars will be overshadowed by the fact that we continue to drive more. Similarly, despite cleaner and more efficient electricity generation, our use of energy continues to grow.

Funding for Climate Change Action Plan Implementation

There is no dedicated source of funding for implementing the Connecticut Climate Change Action Plan. Although much has been accomplished within existing agency budgets and through voluntary programs, achieving the 2020 goal of 10% reductions below 1990 levels will require a significant commitment of innovative public policy and additional resources. Achieving the 2050 goal of 75 – 85% reductions calls for far greater support and major technology breakthroughs.

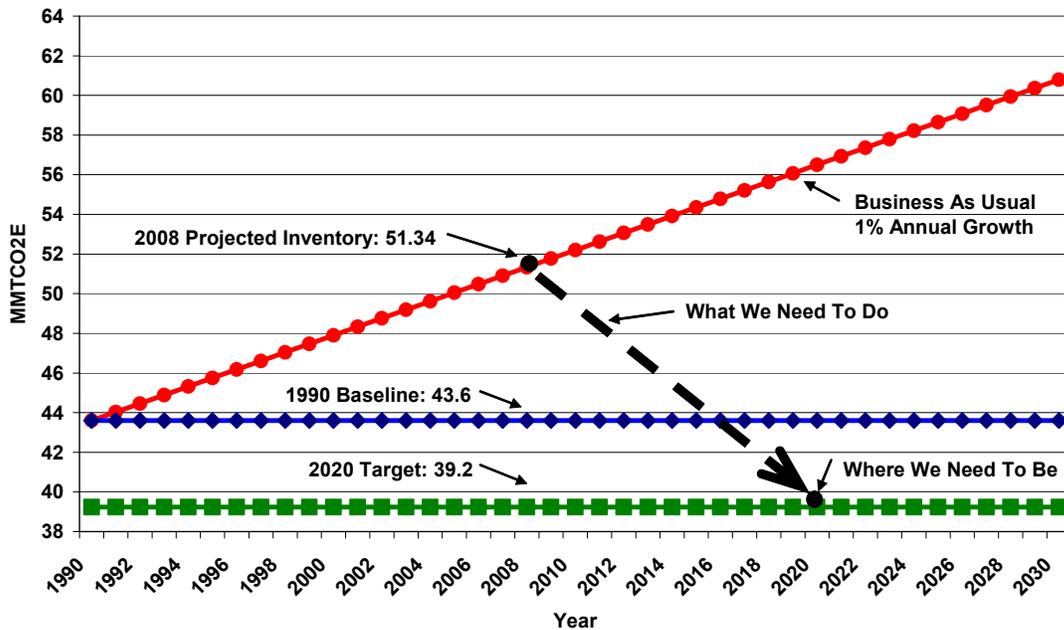
Adapting to an Already Changing Climate

The July 2007 Northeast Climate Impacts Assessment, performed by the Union of Concerned Scientists and a team of over 50 independent experts, provides an assessment of current climate impacts on our region and projections of impacts over the next century. In sum, New

England's climate has already begun to change. Since 1970, we have experienced warming at a rate of nearly 0.5 ° F per decade, with a winter warming rate even greater – 1.3° F per decade. This warming correlates with many observed changes that are consistent with those expected with global warming: “more frequent days with temperatures above 90° F, a longer growing season, less winter precipitation falling as snow and more as rain, reduced snowpack and increased snow density, earlier breakup of winter ice on lakes and rivers, earlier spring snowmelt resulting in earlier peak river flows, rising sea-surface temperatures and sea levels.”² Over the next few decades, temperatures in our region are projected to rise between 2.5 – 4° F in winter and 1.5 – 3.5° F in summer. These temperature increases will result in more frequent coastal flooding, a decline in lobster and cod fisheries, more days over 90° F and 100 ° F, hotter, longer, drier summers, more intense rainstorms, additional stressors on human health from extreme heat, degrading air quality, and vector-borne diseases, and changes in forests, wildlife habitat, and agricultural productivity. These changes call for new approaches to siting and designing infrastructure and transportation systems, land use planning, farming, management of forests and fisheries, public health care, and increased attentiveness to emergency and natural disaster planning. Adapting to climate change has profound economic, social, and environmental implications.

We have just begun to realize the importance and magnitude of adapting to current and imminent changes to our climate. In the coming years, we need to devote significant energy and attention to adaptation in addition to continued focus on reduction of greenhouse gas emissions.

Connecticut GHG Emission Goals



² *Confronting Climate Change in the U.S. Northeast: Science, Impacts, Solutions*, Northeast Climate Impacts Assessment, July 2007.

Measuring Progress

It is difficult to evaluate success without a comprehensive system to measure progress on reducing GHG emissions. Connecticut is developing a voluntary reporting program for GHG reduction efforts. This program will compliment the GHG emissions reporting and inventory activities to help identify areas with the greatest emissions, greatest potential for reductions, and those showing the greatest progress toward meeting Connecticut's overall GHG emissions targets. In addition, we are working with other states on The Climate Registry to develop a robust and verifiable GHG emissions reporting system nationwide. However, a comprehensive measurement system is not yet in place.

Achieving 2010, 2020, and 2050 Goals

Connecticut seeks to reduce GHG emissions to 1990 levels by 2010, 10% below that by 2020, and 75-85% below 2001 levels by the year 2050. It is unlikely that the 2010 goal will be met because of many of the challenges discussed above.

In addition, the Environmental Protection Agency's decision to deny a waiver to California to implement greenhouse gas standards for cars prevents Connecticut and other states from adopting such standards, thus blocking one of Connecticut's major strategies in meeting climate change goals. Connecticut and 18 other states had planned to follow California's lead, requiring vehicles sold in Connecticut beginning with the 2009 model year to reduce GHG emissions by up to 30 percent by 2016. The California standards would have limited greenhouse gas emissions from cars, light trucks and sport-utility vehicles by 392 million metric tons by the year 2020, the equivalent to taking 74 million of today's cars off the road for an entire year. The EPA decision, if it stands, would severely compromise Connecticut's ability to meet the state and regional GHG reduction goals for 2020. Even if the EPA decision is ultimately overturned, the associated delay may preclude Connecticut from reaching its short and medium term GHG reduction targets. Nonetheless, the State will continue to push for strong regulation of GHG emissions from cars and trucks.

Finally, because of the lack of timely federal data to update our statewide GHG inventory, it will be impossible to know if we have achieved the 2010 goal until a few years after 2010. The long-term goal for 2050 is a colossal task. All of the issues discussed above contribute to the major challenge of meeting this goal.

MAJOR ACCOMPLISHMENTS OF 2007

Despite the many challenges ahead, Connecticut continues to be a leader in implementing actions to address climate change. Our accomplishments provide a firm foundation for future action to achieve climate stabilization.

Electricity Generation: Cleaner and More Efficient

REGIONAL GREENHOUSE GAS INITIATIVE (RGGI) – For the past few years, Connecticut has been collaborating with other states to develop a regional cap and trade program to reduce carbon dioxide emissions from the power plants in the northeast. Once implemented in Connecticut, RGGI will stabilize CO2 emissions from large fossil fuel-fired electricity generating units through 2014 and achieve a 10% reduction by 2018. In 2007, the General Assembly directed DEP³ to adopt regulations to implement RGGI in Connecticut, required DEP in consultation with DPUC to distribute most of Connecticut's annual carbon dioxide

³ See Section 93 of Public Act 07-242, codified at Conn. Gen. Stat. section 22a-200c.

allowance budget by auction, and directed the proceeds of such auctions be used to support energy efficiency, renewable energy, and support planning and programs that will Connecticut will need in order to adapt to the anticipated local consequences of our changing climate.

In 2007, DEP released drafts of two new regulations, section 22a-174-31 and section 22a-174-31a, to implement RGGI in Connecticut. DEP met with stakeholders to discuss and improve early drafts. Formal proposed rules were released in December 2007 and a public hearing was held on February 8, 2008. DEP intends to finalize the RGGI regulations by mid-2008.

On a regional level, commissioners and staff from the ten RGGI states complete support for RGGI's launch in 2009. The ten RGGI states continue to collaborate on tasks such as developing an emissions and allowance tracking system and a regional auction platform. Requests for Proposals have been issued for such items and proposals are currently being evaluated.

CONNECTICUT ENERGY EFFICIENCY FUND – The Connecticut Energy Efficiency Fund (CEEF) is funded by a surcharge on electricity bills for customers of Connecticut Light & Power (CL&P) and United Illuminating (UI). The mission of the CEEF is to advance the efficient use of energy, reduce air pollution and negative environmental impacts, and promote economic development and energy security.

2007 Major Accomplishments
Rules to implement the Regional Greenhouse Gas Initiative in CT
Restoration of Energy Efficiency and Clean Energy Funds
Renewable Portfolio Standard increased to 20% by 2020
Launch of Governor Rell's OneThing™ campaign on energy efficiency
4:1 return on energy efficiency investments
13 commercial and 115 residential solar installations
16,000 Clean Energy Options customers
Sixty-five towns are committed to 20% by 2010 clean energy challenge
17.5% clean energy in state electricity purchase
Establishment of heating oil and gas conservation programs
Public stakeholder meetings resulting in new ideas to reduce GHG emissions
Conversion to ultra low sulfur diesel fuel
Establishment of the Office of Responsible Growth

The Department of Public Utility Control's (DPUC) approved 2007 budget for conservation and load management programs was \$71.2 million, together with continued funding of \$25.3 million in additional short-term conservation and load management measures as directed by Public Act 05-01, for a total of \$96.5 million. The electric distribution companies reported robust demand for conservation and load management (C&LM) programs in 2007, and the DPUC granted their request to spend an additional \$12 million through Federally Mandated Congestion Charges and up to an additional \$5 million from 2008 budgets to meet the 2007 demand. Approximately 64% of conservation and load management program dollars are spent on commercial and industrial customers, with the remainder going toward residential and low-income programs. Benefit (electric savings)/cost ratios were estimated for 2007 at 2.4 (CL&P) and 2.2 (UI) for residential programs and 4.2 (both companies) for C&I programs.

In the past, the Connecticut General Assembly has redirected CEEF funds or the state's general fund. Public Act 07-242 provides for restoration of the fund beginning in mid-2008.

The total amount restored pertains to future dollars and not for funds diverted in past years. Based on the legislative restoration of funds, the ECMB proposed a 2008 C&LM-funded budget of \$82 million, up from a 2007 C&LM-funded budget of \$71.2 million approved by the DPUC.

RENEWABLE PORTFOLIO STANDARD – Connecticut law requires that a percentage of electricity generation come from clean energy as outline in the state’s Renewable Portfolio Standard (RPS). Connecticut RPS requires at least 3.5% of electric supply from Class I resources in 2007, 5% in 2008, and the requirement increases annually to 20% in 2020 and thereafter. Connecticut attained its 2005 RPS goal. DPUC review of compliance with the 2006 RPS is pending in Docket No. 07-09-14. Compliance filings for 2007 filings are due on October 15, 2008. Credits for Class III resources will be included in future compliance filings.⁴

CLEAN ENERGY INSTALLATIONS – Connecticut experienced dramatic growth in the use of solar power in 2007 with the installations of 13 commercial and 155 residential photovoltaic (PV) systems. Collectively, these systems will generate more than 2.5 gigawatt-hours (GWh) of clean energy annually and will avoid more than 30,670 tons of greenhouse gas emissions over their lifetimes. In December 2007, United Natural Foods, Inc., a distributor of natural and organic products headquartered in Dayville, Connecticut celebrated the installation of a 480 kilowatt array – currently the largest PV system in New England. Among the other significant milestones achieved by the State in 2007 were the 200th residential solar PV installation and a total of 1 megawatt of capacity for residential solar systems.

CT CLEAN ENERGY OPTIONS – CTCleanEnergyOptions allows any CL&P or UI customer to support clean energy made from approved renewable resources such as wind, small hydro and landfill gas. Customers who enroll in the program continue to receive electric delivery service from their utility and pay a small clean energy surcharge. Through year-end 2007, more than 16,000 customers had enrolled in the CTCleanEnergyOptions program, resulting in more than 116.8 gigawatt-hours (GWh) of clean energy and more than 52,000 tons of greenhouse gas emissions avoided. Furthermore, 65 cities and towns throughout the State had joined the 20% by 2010 Campaign, which is expected to result in voluntary purchases of more than 80 GWh of clean energy by the year 2010. Twenty-five of those municipalities also had qualified as Connecticut Clean Energy Communities, earning a total of 141 kilowatts of

⁴ "Class I renewable energy source" means (A) energy derived from solar power, wind power, a fuel cell, methane gas from landfills, ocean thermal power, wave or tidal power, low emission advanced renewable energy conversion technologies, a small scale run-of-the-river hydropower facility that began operation after July 1, 2003, or certain sustainable biomass facilities, or (B) any electrical generation, including distributed generation, generated from a Class I renewable energy source;

"Class II renewable energy source" means energy derived from a trash-to-energy facility, certain biomass facilities, or a small scale run-of-the-river hydropower facility that began operation prior to July 1, 2003;

"Class III renewable energy source" means the electricity output from combined heat and power systems with an operating efficiency level of no less than fifty per cent that are part of customer-side distributed resources developed at commercial and industrial facilities in this state on or after January 1, 2006, or the electricity savings created at commercial and industrial facilities in this state from conservation and load management programs begun on or after January 1, 2006; or (1) a waste heat recovery system installed after April 1, 2007, that produces electrical or thermal energy by capturing preexisting waste heat or pressure from industrial or commercial processes, or (2) electricity savings created in this state from C&LM program begun after January 1, 2006. (i.e., adds residential savings).

solar PV systems from the Connecticut Clean Energy Fund (CCEF). In addition to the foregoing, the State of Connecticut (see below), certain municipal governments, businesses and institutions have supported clean energy by purchasing Renewable Energy Certificates. In September 2007, Hartford-based insurer, ING, purchased 700 GWh of wind energy credits - the largest ever by a Connecticut business - as part of its efforts to become carbon-neutral by the end of 2007.

STATE CLEAN ENERGY PURCHASE – The Office of Policy and Management and the Department of Administrative Services conducted an innovative and open on-line “reverse auction” to procure electricity for state buildings. As a result, in 2007, Connecticut became the second-largest buyer of clean electricity of states enrolled in the U.S. Environmental Protection Agency’s Green Power Partnership program. Approximately 17.5 percent, or 160 million kilowatt-hours, of state agency electricity is clean energy. That is equivalent to avoiding the carbon dioxide emissions of more than 22,700 passenger cars each year, or the amount of electricity needed to power more than 16,400 average New England households annually. This purchase includes clean energy that is in addition to the state’s RPS, and is estimated to save over \$20 million over the life of the contract.

STRONG LEGISLATION SUPPORTING CLEAN, EFFICIENT ENERGY –Public Act 07-242 includes a number of measures to boost clean energy and efficiency in Connecticut. These requirements will result in GHG reductions over time.

- RPS increase to 20% by 2020
- Requirement for utilities to develop an integrated resource and procurement plan in which all cost-effective efficiency and demand-side resources would be treated as a resource of first choice, in lieu of traditional supply from large fossil-fuel burning plants
- Energy efficiency standards for additional products
- Decoupling of revenue from sales of electricity and gas
- Energy efficiency tax incentives and rebates
- High performance building standards for new and renovated state-funded buildings

Heating/Cooling Energy Efficiency

HEATING OIL CONSERVATION PROGRAM – Public Act 07-242, Section 116, establishes a 13-member Fuel Oil Conservation Board consisting of industry, environmental, and consumer stakeholders. The board will establish itself as a nonprofit organization, issue a Request for Proposals, and choose a program administrator to develop and administer cost-effective oil conservation programs with the advice and assistance of the Fuel Oil Conservation Board. Funding for the oil conservation programs comes from the increase in revenue from petroleum gross receipts tax above 2006 revenue, subject to a \$10 million annual cap. Starting in 2009, the Board shall submit an annual report to the Energy and Technology Committee of the Connecticut General Assembly. On even-numbered years, the board’s activities will be subject to a third party audit.

NATURAL GAS CONSERVATION PROGRAM - Section 115(b) of Public Act 07-242, An Act Concerning Electricity and Energy Efficiency, provides a funding mechanism to support natural gas conservation in the future. The funding mechanism is derived from the amount by which all public service companies’ annual gross receipts tax (GRT) imposed by Section 12-264 of the Act exceed the revenue estimate that appears in the state’s budget for a given year, up to \$10 million per year. The annual excess GRT funds will be calculated at the end of the state’s fiscal year, ending June 30, 2008. The Companies expect the excess GRT funding to be available in October 2008. Should funds become available, they would be deposited into an account held by the Energy Conservation Management Board (ECMB) for reimbursement to the Companies for expenditures made pursuant to the Connecticut Joint

2008 Natural Gas Conservation Plan (2008 Plan). The Plan was submitted by Connecticut Natural Gas Corp., The Southern Connecticut Gas Company, and Yankee Gas Services Company (together, the Companies), and is directed toward implementation of cost-effective natural gas efficiency programs in the residential, commercial, and industrial sectors. In the 2008 Plan, the Companies propose a total budget of \$6,789,503 to continue with the residential and commercial and industrial programs developed in the 2007 conservation plan. This is a significant increase over the approved 2007 conservation plan budget of \$4,057,000. The 2008 Plan budget includes increased conservation funding for all classes of customers and adds a proposed integrated natural gas and electric program (Integrated Program) for commercial and industrial customers. A DPUC decision on the 2008 Plan is expected in Spring 2008.

BIO-DIESEL- The Office of Policy and Management (OPM) has developed a plan to encourage the use of bio-fuel in state facilities. The plan calls for working with the Department of Administrative Services (DAS) to develop a contract with a vendor of Bioheat® for delivery of B10 - a blend of pure bio-diesel with 90% ultra low sulfur #2 heating fuel- at select locations as part of the next DAS contract for heating fuel used by state agencies. Current DAS contractual obligations for the delivery of heating fuel need to be honored through April 2009. This will enable the state to test both reliability and supply availability on a pilot basis.

GEOHERMAL AND SOLAR THERMAL – PA 07-240, An Act Concerning Geothermal Heat Systems, requires the Renewable Energy Investments Advisory Committee (CCEF Board), in consultation with the DPUC and the Energy Conservation and Management Board (ECMB) to study the (1) cost-effectiveness and efficiency of geothermal and other advanced heat pump systems, (2) appropriate geothermal applications for industrial, commercial and municipal purposes, and (3) identify barriers, financial or other, to greater applications and ways to promote. CCEF, DPUC and ECMB will report back to the General Assembly in March 2008.

Cleaner Transportation

GREENING OF TRANSIT OPERATIONS – The statewide bus fleet of over 600 full-size buses has completed its transition to ultra-low sulfur diesel fuel. In addition, most of those buses are also operating with a 5% biofuels additive. The three largest CT Transit facilities are also adding 5% biofuels to the heating oil used for space and hot water heating for a combined total of about 300,000 gallons of biofuels added to the total usage of about 6 million gallons of diesel motor and heating fuels. Bicycle racks are now available on the majority of transit buses in the state enabling bicycle commuters to take their bikes with them to facilitate traveling to and from the bus stops.

CTTransit, the state-owned portion of the transit system statewide, added its first fuel cell bus to the fleet operations. The state also was accepted into a Federal Transit Administration fuel cell bus research program that will deliver four more fuel cell buses to CTTransit in 2009.

CTTransit has also begun installing diesel particulate filters on its diesel bus fleet using federal Congestion Management and Air Quality (CMAQ) funds. These filters can remove most of the remaining diesel particulates emitted by the older buses in our fleet.

CLEAN CAR STANDARDS – California Low Emission Vehicle II standards are effective in Connecticut starting with 2008 model year vehicles. These cleaner vehicles are currently being sold in Connecticut.

As mentioned above, Connecticut has also adopted California standards for greenhouse gas emissions from cars. Despite recent judicial decisions to support the regulation of greenhouse gas emissions from motor vehicles (US Supreme Court decision in April 2007, September 2007 federal court decision in Vermont, and December 2007 federal court ruling in California), the Environmental Protection Agency (EPA) refused to grant a waiver to California to allow higher standards for GHG emissions from cars. A waiver is necessary for California to enforce its GHG emission standards for cars, light duty and medium duty trucks. Connecticut and 18 other states had planned to follow California's lead, requiring vehicles sold in Connecticut beginning with the 2009 model year to reduce GHG emissions by up to 30 percent by 2016. The California standards would have limited greenhouse gas emissions from cars, light trucks and sport-utility vehicles by 392 million metric tons by the year 2020, the equivalent to taking 74 million of today's cars off the road for an entire year. The State will continue to push for strong regulation of GHG emissions from cars and trucks.

CLEAN DIESEL - Connecticut, and the nation, began the conversion to ultra-low sulfur non-road diesel fuel in 2007. The sulfur content of this fuel has been reduced from 3,000 ppm to 500 ppm. This enhances the sulfur reductions from the change in on-road diesel fuel from 500 ppm to 15 ppm ultra low sulfur diesel that was begun in 2006. By 2030, emission reductions will be equivalent to removing the pollution from more than 90 percent of today's trucks and buses, when today's vehicles will be fully replaced by new (post 2007 model year) heavy-duty vehicles.

CLEANER SCHOOL BUSES – The Clean School Bus Legislation of 2007, Public Act 07-4, requires that all full-sized school buses transporting children in Connecticut, model year 1994 and later, be retrofitted with closed crankcase filters (CCVs) and tailpipe emission controls by September of 2010. State funding of \$10 million is provided. Diesel particulate filters are mandated for all buses model years 2003-2006 that have not been previously retrofitted, provided that the control devices can be purchased and installed with a CCV for under \$5,000. DEP continues to work with local school districts seeking federal funding to install retrofits to reduce particulate emissions from school buses. Projects have been developed and are underway in Fairfield, Bridgeport, Old Lyme, and Hamden. These will join projects successfully completed in Norwich, New Haven, Newington and Stamford. Two additional proposals, for Newtown and Mansfield, have been submitted for Clean School Bus USA funding in 2007. Most school buses across Connecticut are now fueled with ultra low sulfur diesel.

Responsible Land Use

SMART GROWTH/TRANSIT ORIENTED DEVELOPMENT – One of the key recommendations of the Climate Change Action Plan was to double transit ridership by 2020. To achieve that goal, major changes have to be made in the modes people select for their travel. One major part of that choice is to encourage development around transit terminals and in developments with the density that can support transit. Progress has been made over the past year on three major transit oriented development projects that are integrated into new railroad station construction. New stations in Fairfield, Georgetown and West Haven will both provide new access points for commuters to take the train, and concentrate development around the station so employees and residents can conveniently utilize transit.

During the 2007 General Assembly session a new program was created to provide up to \$5 million in planning grants for transit-oriented development. The proposals would originate with towns and regional planning agencies. The Office of Policy and Management would review the proposals and then the Department of Transportation would execute agreements

for the funding. Program procedures are being developed and work on some project concepts has already begun at the local level.

RAIL SERVICE ENHANCEMENTS – Over the past few years, DOT has obtained 33 new rail cars and 8 locomotives to augment service and improve fuel efficiency on the Shore Line East rail line. DOT has ordered seven new reduced-emissions locomotives to replace older branch line locomotives, and is upgrading and overhauling the remaining of 18 fleet locomotives to further improve clean emissions. All locomotives use low sulfur diesel fuel. Another 380 electric rail cars will replace older electric and diesel operating trains by 2011-2012. From 2006 to 2007, rail ridership increased 5.5% on Shoreline East and 3.9% on the New Haven line. Combined, both lines provided 36.9 million rides in 2007.

An Environmental Assessment for improvements to the New Haven-Hartford-Springfield Commuter Rail Service is being performed. Future steps include: developing a funding plan, completing the environmental review process, preliminary design, executing operating agreements, final design and property acquisition, procuring rolling stock, and constructing new facilities.

DOT has completed The Danbury Branch Electrification Feasibility Study - Phase I (2006), which evaluated alternatives and identifies five options for improving passenger rail service along the Danbury-Norwalk rail line. Phase II of this study is evaluating the five options and developing an implementation plan. In addition, DOT plans to evaluate transportation needs in Eastern Connecticut, including the viability of implementing passenger rail service along the New London – Worcester corridor. The Southeastern Connecticut Council of Governments, in cooperation with DOT, will be determining the feasibility of a New London transportation intermodal center.

BUS SERVICE ENHANCEMENTS - The Governor's Transportation Initiative included the purchase of buses for new service. In the 2005 and 2006 phases of the initiative, \$7.5 million was provided to purchase new buses. Operational funding was provided starting in the state fiscal 2008 budget to run the services. A total of 24 new services utilizing 36 new vehicles were approved for implementation. To date, five services that did not need additional vehicles have begun to operate. Twelve services needing 17 new vehicles have been started with buses from surplus or contingency fleets, with new buses on order. Seven services needing 19 buses will begin once new buses arrive.

Final design continues on the planned New Britain-Hartford Bus Rapid Transit system. Right of way acquisitions have begun for the 9.4 mile exclusive bus way. Early construction activities are scheduled to begin in late 2009 or 2010, with completion in 2013.

OFFICE OF RESPONSIBLE GROWTH - A Responsible Growth Task Force was created (as required in *An Act Concerning Responsible Growth*, P.A. 07-239) to identify responsible growth criteria to help guide the state's future investment decisions and study land use laws, policies and programs, including programs concerning the transfer of development rights. The Task Force submitted a report with recommendations on these issues to the Governor in February 2008.

RESPONSIBLE GROWTH WEB SITE - In November 2007, a new website was launched, "*Green and Growing: Tools for Responsible Growth.*" The web site provides a virtual toolbox and roadmap to promote responsible growth principles region by region and community by community. The new site can be accessed by visiting www.ct.gov/opm/ResponsibleGrowth. Steering Committee agency programs and funding sources are listed for use by any interested party.

GREEN PLAN - In November 2007, an updated “Green Plan” was issued. The Green Plan sets forth a strategy for making significant land use decisions by identifying the priorities for acquisition and protection, describing the programs and funding available and outlining the preservation process. These strategies will be linked with the Responsible Growth Initiative. The Green Plan can be viewed by visiting www.ct.gov/dep.

LAND PRESERVATION - In Dec 2007, the State Bond Commission, chaired by Governor Rell, allocated \$5 million in bonding to the CT Department of Agriculture for the preservation of agricultural lands. This 'lump sum' method of funding farmland preservation was enabled through PA 07-162 and dramatically improves on the historic need to request funding for one farm project at a time. Currently there are 32 farm properties regarded by the CT Department of Agriculture as 'in the pipeline' for protection, totaling 3,843 acres and worth over \$15 million. The Commissioner of Agriculture is empowered to request an additional lump sum of at least \$5 million in early 2008.

Education and Outreach

ONETHING™ ENERGY MARKETING CAMPAIGN – Governor Rell unveiled a broad-based energy efficiency marketing campaign in 2007 entitled OneThing™. The campaign encourages CT residents and businesses to do OneThing™ to save energy and protect the planet. The campaign features media advertisements, a comprehensive website and will culminate in a OneThing™ Expo in Hartford in October 2008. The initiative is garnering wide interest from other states. The Emily Hall Tremaine Foundation has provided funding to integrate implementation of the CT Climate Change Action Plan into the OneThing™ campaign in 2008.

THE “WARMING OF CONNECTICUT” DOCUMENTARY – The “Warming of Connecticut” is an original documentary produced by Jennifer Boyd, a West Hartford resident that aired on Connecticut Public Television in June 2007. This documentary examined the science and solutions associated with Climate Change at a local level.

LEARNING FOR CLEAN ENERGY INNOVATION – The CCEF launched a solar energy curriculum program that utilizes photovoltaic arrays and an enhanced monitoring system located in schools in certain Clean Energy Communities. The program incorporates a specially designed curriculum aligned with the Connecticut Department of Education’s Science Frameworks and will be offered to 9th-grade teachers from towns that are participating in the 20% by 2010 Campaign.

Planning for Deeper GHG Reductions

PUBLIC STAKEHOLDER MEETINGS – In June 2007, the Governor’s Steering Committee on Climate Change initiated a series of Climate Change Public Stakeholder meetings. The meetings provide a forum for ongoing dialogue on current initiatives under the Connecticut Climate Change Action Plan and emerging greenhouse gas reduction solutions for Connecticut. Public stakeholder meetings are being held to focus on the following areas: Electricity Generation and Efficiency, Transportation and Land Use, Non-Electric Energy Use, Agriculture Issues, and Education and Consumer Awareness. The first meeting was held in June 2007 in Hartford. The Electric Generation and Efficiency meeting was held in September in New Britain and the Transportation meeting was held in November in Fairfield. Approximately 65 – 100 people attended each meeting. Input from these public stakeholder meetings will guide climate change planning for continued and deeper greenhouse gas reductions in Connecticut. The meetings will conclude in the summer of

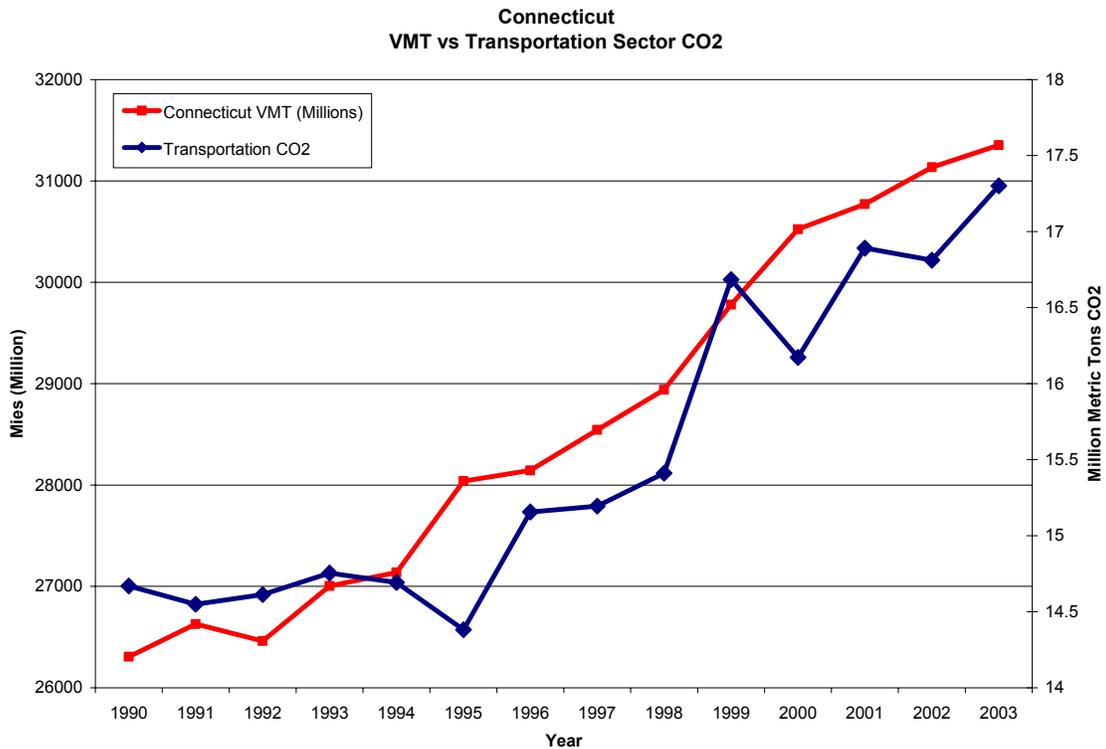
2008. The schedule for stakeholder meetings and summary of ideas discussed can be found at <http://ctclimatechange.com/stakeholder.html>

PLANNING FOR 75-85% REDUCTIONS BY 2050 – The Governor’s Steering Committee on Climate Change is developing strategies to achieve long-term significant reductions through the following methods: 1) input from the public stakeholder meetings; 2) analysis of greenhouse gas reduction initiatives in other states; 3) policies and actions proposed in Connecticut roadmaps and planning documents developed by other organizations, and 4) continued close coordination with New England, western states, Canadian provinces, and other states on climate change solutions. The development and implementation of comprehensive strategies to achieve 2050 goals of 75 – 85% GHG reductions continues to be a major challenge requiring comprehensive federal legislation on climate change.

There have been many other accomplishments in implementing the CT Climate Change Action Plan in 2007. Some additional highlights can be found in the attached “Photo Album of Connecticut Climate Change Solutions, 2007.” For more detailed information on progress in implementing each action in the CT Climate Change Action Plan, see www.ctclimatechange.com, click on “publications,” then “report on progress in 2007.”

MEASURING PROGRESS

Connecticut continues to offset progress on efficiency and conservation programs with increased population and overall consumption. Programs designed to decrease electricity and gasoline consumption will require more time to achieve significant reductions in overall demand and consumption. Meanwhile statewide electricity demand and motor vehicle use continue to grow.

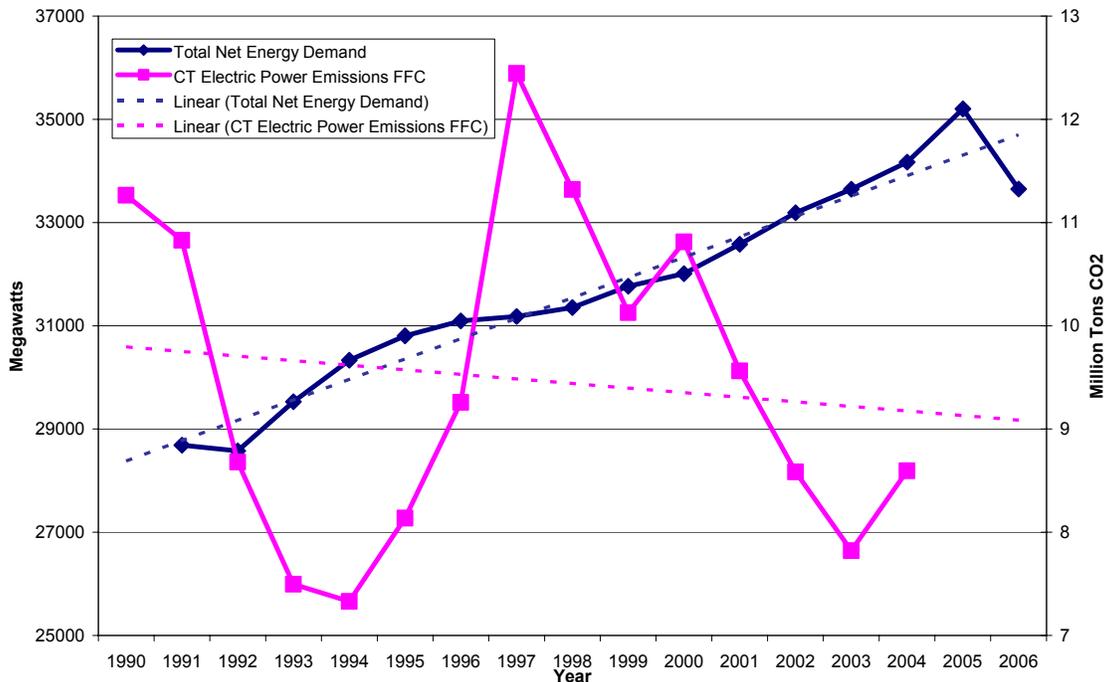


Key Areas of GHG Growth

As shown in the graph above, the annual growth in Vehicle Miles Traveled (VMT) in Connecticut shows a high degree of correlation with the emissions from fuel use in the transportation sector.

Per capita electricity use also continues to grow. Connecticut has experienced a 1.3% annual average increase in per capita electricity consumption between 1980 and 2001. However, despite this growth in consumption, there has been progress in declining GHG emissions in the electric power generation sector. The power plants serving Connecticut have gotten cleaner and more efficient in the past ten years due to the shift from coal to natural gas as the primary source of power for base-load generators.

Connecticut Electric Demand vs Emissions



GHG Reductions for Major Programs

Limitations on data availability and comprehensive GHG measurement systems make it impossible to measure or project overall statewide GHG increases/decreases through 2008. However, the trends show that GHG emissions from Connecticut continue to rise beyond earth’s ability to sequester these additional emissions.

It is possible, however, to measure the relative effectiveness of discrete programs in reducing GHG emissions beyond a business as usual scenario. The table below shows the GHG benefits of the following successful programs in 2007: energy efficiency initiatives supported by the State, the CleanEnergyOptions program and State electricity purchase, and clean energy installations.

Successful GHG Reduction Programs in CT, 2007

Program	Tons CO2e Avoided in 2007
CT Energy Efficiency Fund actions	155,000
Clean Energy Option	76,302
Appliance Standards	22,722
Building Operator Certification	10,680
CT Clean Energy Purchase	7,784
Commercial Fuel Cell	1
Commercial Solar	1
Total	272,489

The Climate Registry

The Climate Registry is a “collaboration between states, provinces and tribes aimed at developing and managing a common greenhouse gas emissions reporting system with high integrity that is capable of supporting various greenhouse gas emission reporting and reduction policies for its member states and tribes and reporting entities. It will provide an accurate, complete, consistent, transparent and verified set of greenhouse gas emissions data from reporting entities, supported by a robust accounting and verification infrastructure.”⁵ The Climate Registry was incorporated as a non-profit organization in March 2007. During 2007, 54 state and local governments, corporations, and other organizations, including 39 US states and the District of Columbia comprising over 80% of the US population, have joined as “founding reporters.” The Climate Registry has created a General Reporting Protocol that will be used by these reporting entities to measure, independently verify, and publicly report GHG emissions annually. This initiative is a major accomplishment in setting the stage to create a sound system for tracking and monitoring GHG emissions nationwide.

⁵ From the Climate Registry Website <http://www.theclimateregistry.org/>.