



Connecticut Climate Change

www.ctclimatechange.com

Connecticut Climate Change Public Stakeholder Meeting

Sponsored by the Governor's Steering Committee on Climate Change

November 27, 2007, 8:30 a.m. – 12:30 p.m.

Fairfield Board of Education Building

Education Center Conference Room

Agenda

Meeting Focus: Greenhouse gas reductions in the area of Transportation

- 8:30 Networking and Breakfast
- 9:00 **Welcome**
Kenneth A. Flatto, First Selectman, Fairfield
- 9:10 **Update on Climate Change Action Plan Transportation Actions**
Mike Sanders (DOT), Paul Farrell (DEP), CT Climate Change Coordinating Committee
- 9:30 **Transportation Systems and Responsible Growth – Complementary Tools to Effectively Manage GHG Emissions**
Albert A. Martin, Deputy Commissioner, CT Department of Transportation
- 10:00 **Employer Perspective on Reducing Employee Trips**
Edward M. Houghton, Director, Workforce Effectiveness, Pitney Bowes
- 10:20 Panel Questions and Answers
- 10:45 Break
- 11:00 Breakout session – small groups will address the following questions.
- What are some strategies, technologies, or incentives that Government might use to further reduce greenhouse gas emissions from the transportation sector in Connecticut? Please include ideas on how to measure success.
 - How can we further encourage businesses to implement measures to reduce greenhouse gas emissions from the transportation sector? Please include ideas on how to measure success.
 - How can we further encourage/educate citizens to implement measures to reduce greenhouse gas emissions from the transportation sector? Please include ideas on how to measure success.
- 12:15 Wrap Up



Connecticut Climate Change

Public Stakeholder Meeting Focus: Transportation

Sponsored by the
Governor's Steering Committee on Climate Change
November 27, 2007, 8:30 a.m. – 12:30 p.m.
Fairfield, CT



Connecticut Climate Change

Thank You!

- To our speakers:
Ken Flatto
Ned Hurle, Michael Sanders, Paul Farrell
Albert Martin
Edward Houghton
- Fairfield Board of Education – meeting facility
- Healthy in a Hurry – catering
- Claire Nolin, OPM – facilitation
- DOT and CT Transit – hybrid bus from train station
- Emily Hall Tremaine Foundation – financial support
- You – ideas and interest



Connecticut Climate Change

Public Stakeholder Meetings

- June 2007 – Kick off meeting, Hartford
- September 2007 – Focus on Electric Generation and Efficiency, New Britain
- November 2007 – Focus on Transportation, Fairfield
- January 2008 – Focus on Non-Electric Energy Use and Efficiency, Location TBD
- March 2008 – Focus on “other” (recycling, purchasing, etc.), Willimantic
- May 2008 – Focus on Education, New Haven

Please check website for exact meeting dates and locations – www.ctclimatechange.com , click on “public stakeholder meetings”



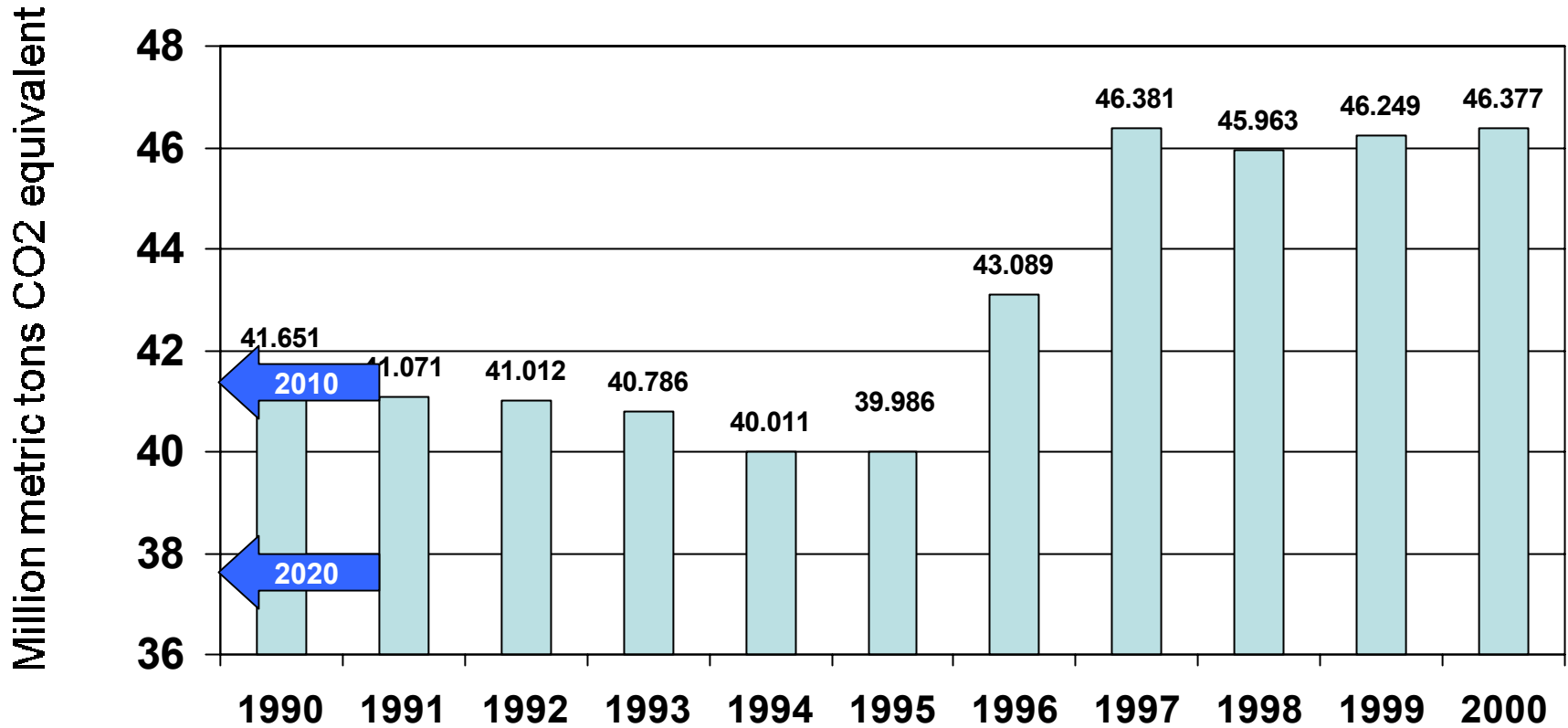
Connecticut Climate Change

This meeting is **GREEN**

- Public transit accessibility, carpooling
- Renewable Energy Credits
- Electronic communication
- Minimal paper handouts
- Sustainable catering



CT Climate Change Action Plan Background CT GHG Inventory, 1990 – 2000





Connecticut Climate Change

CT Climate Change Action Plan Transportation/Land Use Actions

- California LEV II standards
- GHG feebate system
- Fleet vehicle incentives and initiatives
- Tailpipe GHG standards
- Public education initiative for low GHG vehicles
- Hydrogen infrastructure research and development
- Transit, smart growth, vehicle miles traveled reduction
- Multi-state intermodal freight initiative
- Clean diesel and black carbon



Connecticut Climate Change

California LEV II Standards

- DEP adopted CA LEV II standards to address “normal” air pollution (e.g., smog precursors)
- Nominal climate benefit (2-3%) with LEV II standards (in 2020)
- Rules effective with the 2008 model year (now) for PCs and LDTs up to 8,500 lbs
- DEP working with DMV to implement and enforce the program



Connecticut Climate Change

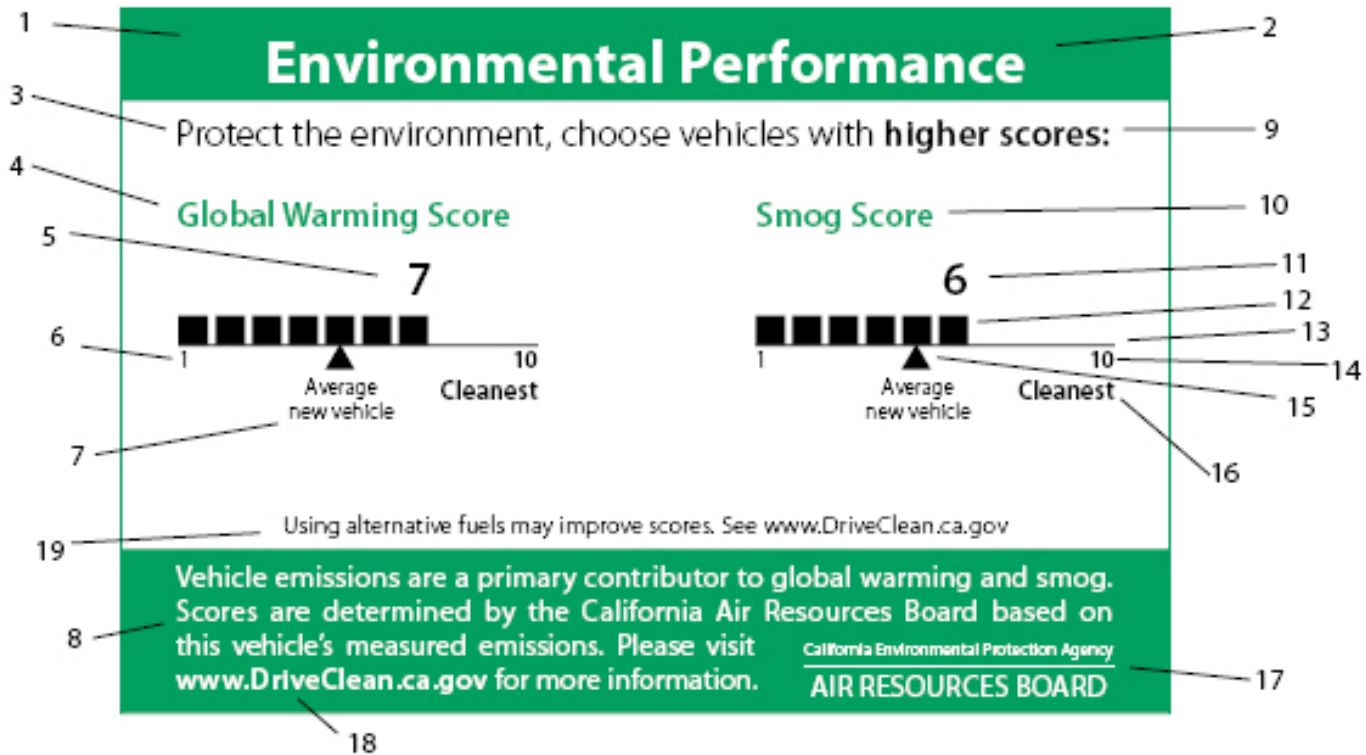
Feebates & GHG Labeling

- Feebate – establishing a price differential (+/-) per vehicle based on GHG emissions or vehicle efficiency.
- DEP (et al) conducted a study in 2005; feebates are not feasible unless regional
- Feebates concept morphed into “GHG Labeling Program” under PA 06-161
- DEP in process of adopting rules to require OEMs to list vehicle GHG emissions on new vehicles as of 10/1/08



Connecticut Climate Change

Sample GHG Label – Coming Next Year





Connecticut Climate Change

Tailpipe GHG Standards

- DEP adopted CA's tailpipe GHG emission standards in 2005 for the 2009 model year, including PCs, LDTs and MDVs up to 10,000 lbs (e.g., the biggest SUVs)
- Standards, based on current technology, would reduce motor vehicle GHG emissions by 25-30% by 2022
- Standards are subject to a variety of legal challenges & hurdles
- EPA must issue a "waiver" before states may enforce these standards



Connecticut Climate Change

Clean Diesel and Black Carbon

- National transition to ultra-low sulfur diesel fuel & federal 2007 HDD emission standards
- PA 07-4 requires all 1994-06MY full sized school buses be retrofit by 2010 & provides \$10 M to do so
- Anti-idling efforts include:
 - 116 space truck stop electrification in N. Stonington, CT
 - Considering aux power units (APUs) for new 2009 MY heavy duty diesel trucks



Connecticut Climate Change

Transit, Smart Growth and VMT “Reduction”

- Integrated Strategies to Manage VMT
 - **Double Transit Ridership**
 - **Enhance sustainable communities**
 - **Value Pricing**
 - **Transportation Demand Management**



Connecticut Climate Change

Transit, Smart Growth and VMT “Reduction”

- Double Transit Ridership
 - **10% Growth in bus and rail ridership since 2004**
 - **Governor’s Service Initiative I**
 - **Service Initiative Phase 2**
 - **Shore Line East Service Expansion**
 - **New Haven/Hartford/Springfield Rail**
 - **Other Studies**



Connecticut Climate Change

Transit, Smart Growth and VMT “Reduction”

- Enhance Sustainable Communities
 - **Executive Order 15**
 - **Responsible Growth: Office of; Interagency Steering Council; Act Concerning; Tools for;**

www.ct.gov/opm/responsiblegrowth



Connecticut Climate Change

Transit, Smart Growth and VMT “Reduction”

- Other Strategies
 - Value Pricing
 - Transportation Demand Management

Multi-State Intermodal Freight Initiative



Connecticut Climate Change

More Information

- www.ctclimatechange.com
click on “public stakeholder meetings” for meeting schedule and info
- Michael Sanders, Transit Administrator
DOT Bureau of Public Transportation
michael.sanders@po.state.ct.us
(860) 594-2830
- Paul Farrell, Supervising Env Analyst
DEP, Climate & Energy Group
Paul.Farrell@po.state.ct.us
(860) 424-3389



Connecticut Climate Change

www.ctclimatechange.com

Status Update of Recommended Actions in the Transportation/Land Use Sector CT Climate Change Action Plan November 2007

This document summarizes the status of initiatives to implement the Transportation/Land Use actions in the CT Climate Change Action Plan. A series of bi-monthly Climate Change Public Stakeholder meetings, sponsored by the Governor's Steering Committee on Climate Change, provides a forum for ongoing dialogue on both these current initiatives and emerging greenhouse gas reduction solutions for Connecticut. Public stakeholder meetings are being held for each category of actions in the CT Climate Change Action Plan: Electricity Generation and Efficiency, Transportation and Land Use, Non-Electric Energy Use, Other (e.g., recycling, environmental purchasing), and Education. Input from these public stakeholder meetings will help guide climate change planning for continued and deeper greenhouse gas reductions in Connecticut. The schedule for stakeholder meetings and summary of ideas discussed can be found at <http://ctclimatechange.com/stakeholder.html>

Recommended Action (RA) 1: California LEV II standards

Purpose:

The California Low Emission Vehicle II (LEV II) program establishes strict emission standards for all new cars sold in California as well as for any other state that adopts the program. These standards address non-methane organic gas (NMOG), oxides of nitrogen (NO_x), and carbon monoxide (CO).

Progress:

- The CT Department of Environmental Protection (DEP) adopted regulations in December 2004 that require compliant vehicles commencing with the 2008 model year.
- Full roll out of the program is occurring now.
- Automobile manufacturers are reporting key information to DEP and DEP is monitoring compliance through such records. The CT Department of Motor Vehicles (DMV) is taking steps to further ensure compliance at the time of vehicle registration.
- DEP continues to work with DMV and the automobile manufacturers to ensure the successful implementation of the LEV II program in Connecticut.

RA 2: GHG Feebate System

Purpose:

Under a feebate system, purchasers of high CO₂-emitting vehicles would pay a fee, whereas purchasers of low-CO₂-emitting vehicles would receive a rebate. A feebate system could be implemented regionally to strengthen the market signal to vehicle manufacturers and prevent adverse economic impacts in the State.

Progress:

DEP finalized the report required by Special Act 05-6 and submitted the report and associated plan to the General Assembly in January 2006. The full text of the report to the General Assembly from DEP is available at: www.ct.gov/dep, search for “feebate.”

The DEP report found that the existing tax structure creates obstacles to creating a system that will effectively influence customer choices, including:

- The manner in which sales tax is collected by automobile dealers and reported to the State;
- The fact that automobile dealers do not charge sales tax to lease companies (the lease companies purchase vehicles on a tax-exempt basis and charge a sales tax on each payment);
- The fact that sales tax on a new motor vehicle does not apply to the full purchase price when the sale involves a trade-in allowance.

To address these hurdles and others identified during the stakeholder study, the DEP report suggests:

- That sales tax laws be further studied and amended to fairly address issues related to leased vehicles and trade-in allowances;
- That the Department of Revenue Services (DRS) and the Department of Motor Vehicles (DMV) perform further studies on costs associated with planning, developing, and implementing a feebate program;
- That the General Assembly consider allocating funds to DRS, DEP, and DMV to cover the costs associated with the program start up;
- That Connecticut should continue to work with the other northeast states to regionalize this program and others.

If the challenges presented by Connecticut’s existing tax structure can be resolved, key elements of a “feebate” program should be structured around the following guidelines:

- Establish a two-tiered system, with one tier for passenger vehicles and another tier for light-duty trucks;
- Base the incentive on average fuel economy in miles per gallon, as fuel efficiency has a strong correlation to greenhouse gas emissions and is less complicated to calculate;
- Create a consumer-friendly labeling program that makes it clear which vehicles on a car lot are considered “clean” and which do not qualify as “clean;” and
- Mount a public education effort prior to and after the start up of the program so that consumers are well aware of the program’s existence and purpose.

The DEP has taken no further action on RA 2.

RA 3: Fleet Vehicle Incentives and Initiatives

Purpose:

Establish incentives and initiatives to encourage acquisition of low-greenhouse gas (GHG) vehicles in public, private, and State fleets.

Progress:

- The Department of Administrative Services (DAS) increased the fleet of 142 hybrid vehicles to 277 in 2007. In 2006, the state fleet hybrids were driven a total of 791,618 miles. These hybrid vehicles have substantially improved fuel economy and lowered greenhouse gas emissions by 50 percent or greater compared to the ones they replaced. They also save the taxpayer money on gasoline, a significant plus with today's fuel prices. From January – September 2006, state hybrids resulted in 43,897 fewer gallons of gasoline used and 390 tons of CO2 avoided.
- DAS has increased the volume of biodiesel purchased by more than 100% in 2007 to just over 200,000 gallons.
- The Diesel Retrofit RFP was issued on October 29, 2007. Proposals are due back on December 5th.
- DAS is converting two stations to E85 (Buckingham 10,000 gallons and Norwich 6,000 gallons) to service the 1,685 Flex-Fuel vehicles. These Flex-Fuel vehicles comprise 39.45% of the existing fleet.

RA 4: Tailpipe GHG Standards

Purpose:

Amend LEV II regulations to include GHG standards. Under these standards, new motor vehicles will be required to emit 30 percent fewer GHGs than would have been emitted without the program. The program establishes two fleet average standards for GHG emissions: one for cars, light trucks, and small sport utility vehicles (SUVs) and another for heavier trucks and large SUVs. The standards will be phased in between the years 2009 and 2016.

Progress:

- Regulations implementing the GHG provisions of the LEV II program were adopted on December 22, 2005.
- The regulations will be effective with the 2009 model year **provided that**:
 - California prevails in a legal challenge being mounted by the automobile manufacturing industry; and
 - The United States Environmental Protection Agency issues a waiver, required by the Clean Air Act, enabling California and other states that have adopted California's standards to ***enforce*** these standards.
- EPA has failed to act on the waiver request submitted by California in 2005.
- On November 9, 2007, California, Connecticut and thirteen other states filed suit against EPA for unlawfully withholding and unreasonable delay in issuing a final decision on the waiver request.

RA 5: Public Education Initiative for Low GHG Vehicles

Purpose:

Raise public awareness about the benefits of low-GHG vehicles, including the available incentives and potential maintenance options.

Progress:

- The General Assembly adopted Public Act 06-161, An Act Concerning Clean Cars, which became effective October 1, 2006.
- This act requires the DEP, in consultation with the DMV, to establish a GHG labeling program for new motor vehicles weighing 10,000 pounds or less sold or leased in Connecticut beginning with the 2009 model year (mid-2008).
 - GHG labels will contain the vehicle's GHG score and the average GHG score for vehicles within the same vehicle class as the vehicle to which the label is affixed.
- This act also requires the DEP, in consultation with the DMV, to establish or contract for a public education program regarding the GHG vehicle labeling program. The public education program will also provide for the dissemination of information about the environmental impact of GHG emissions from motor vehicles and the impact of vehicle choice on GHG emissions.
- The labeling, education and outreach programs are to be funded through a \$ 5 fee on new car registrations.
- The CT DEP developed a fact sheet for the general public, entitled, *Reducing Your Environmental Footprint: Information on Purchasing a Vehicle, Driving, and Maintenance Tips* that is available on the DEP website at www.ct.gov/dep, click on “pollution prevention” under featured links (on the right), click on “individuals and families” and scroll down to find the fact sheet.
- DEP has drafted regulations to implement a GHG labeling program. These regulations are currently under legal review and will be subjected to public hearing in early 2008.

RA 6: Hydrogen Infrastructure Research and Development Program

Purpose

Support research on low-GHG vehicle technology, such as fuel cells, and assess how best to facilitate the development of alternative fuel infrastructure and refueling networks through measures such as pilot projects, research and development, and incentives.

Progress

- **The Connecticut Hydrogen-Fuel Cell Coalition**,¹ administered by the Connecticut Center for Advanced Technology, is comprised of representatives from Connecticut’s fuel cell and hydrogen industry, labor, the Connecticut Clean Energy Fund, and other stakeholders. The coalition is working to advance the development, manufacture, and deployment of fuel cell and hydrogen technologies and associated fueling systems in Connecticut.

¹ More information can be found about the coalition at www.ccat.us

Connecticut companies lead the world in the development of alkaline, molten carbonate and phosphoric acid fuel cells and are among the leaders in proton exchange membrane (PEM) and solid oxide fuel cell development. Connecticut companies in hydrogen generation are leaders in both alkaline and proton exchange membrane electrolysis systems and in converting natural gas or petroleum products to hydrogen through reforming processes.

- **A research study entitled *Preparing for the Hydrogen Economy: Transportation*,**² was conducted by the Connecticut Department of Transportation and the Connecticut Academy of Science and Engineering in June of 2006. This study indicates that Connecticut has a significant portion of the U.S. and world fuel cell development activity as well as a number of companies involved with hydrogen generation and distribution. It is estimated that Connecticut has 1,000 people working in these areas, compared to 6,300 people working worldwide in fuel cells.

Specifically, the aim of the study was to identify issues and barriers relevant to developing a hydrogen-based transportation fueling system in Connecticut, taking into consideration safety, methods for delivery of hydrogen to fueling stations, and timelines for implementation. The study identifies issues relevant both to fleet operations and the general public's use, as well as policy options for the state of Connecticut to address hydrogen-fueled transportation issues amenable to state action.

Going forward, the study recommends to Connecticut policy makers that they choose among several policy options that include both a *monitoring* and/or *promotional* programs:

Monitoring Programs

This program is a second-mover tactic that would position Connecticut for hydrogen-fueled transportation after deployment in other states. It would include:

- Monitoring progress in hydrogen-fueled transportation;
- Establishing a proactive codes and regulation environment;
- Anticipating hydrogen-fueled transportation in infrastructure design and construction; and
- Developing a comprehensive Connecticut or regional plan.

Promotional Programs

This program is a first-mover tactic that would position Connecticut to be among the states with the earliest deployment of hydrogen fueled transportation. It would include:

- Funding demonstration programs;
- Public outreach; and
- Establishing partnerships.

Substantial government support during research, development, demonstration, and the market development period is critical to maintaining private investment. Public-private partnerships may be needed to ensure an effective approach to deployment.

- **Fuel Cell Economic Development Plan** - as required through P.A. 06-187, the Connecticut Center for Advanced Technology, working with the Connecticut Hydrogen Fuel Cell Coalition, is developing a plan for fuel cell economic development. A preliminary report will be developed to identify, analyze, and assess market conditions for fuel cell and hydrogen development with a final plan due in January 2008.

² More information can be found about this study at www.ctcase.org

- **A demonstration project through the National Fuel Cell Bus Program**, entitled Dual Variable Output Fuel Cell Hybrid Bus Validation and Testing, will take place in Connecticut cities and others across the nation. This over \$5.7 million project seeks to develop a battery- dominant 35-foot-plug-in-hybrid fuel cell bus built by Mobile Energy Solution. This project will involve CT Transit in Hartford and New Haven.
- Ongoing public opinion research through a *Comparative Assessment of Consumer Awareness of Clean Energy in Connecticut and the United States*,³ conducted by Nexus Market Research for the Connecticut Clean Energy Fund, identifies strong signs of public awareness of fuel cell technology in Connecticut vs. the nation as a whole.

| | 2005 | 2006 |
|--------------------------------|-------------|-------------|
| Connecticut | 39% | 51% |
| CESA States⁴ | 35% | 31% |
| United States | 34% | 34% |

- **Fuel Cell Performance Monitoring & Evaluation Program** is presently being developed with Power Management Concepts for the 6 Connecticut Clean Energy Fund sponsored stationary fuel cells, and potentially others as they come on line.

RA 7: Transit, Smart Growth, and Vehicle Miles Traveled (VMT) Reduction Package

Purpose

Passenger VMT in Connecticut is projected to increase by 22 percent from 2000 to 2020, according to DOT’s Master Transportation Plan. This package of recommendations is aimed at reducing that growth by 3 percent to 19 percent. This will be accomplished through increased accessibility and low-GHG travel choices in Connecticut, such as transit (rail and bus), vanpools, walking, and biking.

Progress – Transit

- The New Haven- Hartford- Springfield Commuter Rail Implementation Study – An agreement to perform the required environmental analysis and documentation in accordance with the National Environmental Policy Act (NEPA) and Connecticut Environmental Policy Act (CEPA) is being finalized. Some of the future steps needed to pursue recommended Start-up Service would include developing a funding plan, completing the environmental process, preliminary design, executing operating agreements, final design and property acquisition, procuring rolling stock, constructing new facilities, etc.
- A new rail car maintenance facility to be located in the New Haven Rail Yard is actively being developed.
- CT DOT plans to initiate a study (2008) to evaluate the transportation needs in Eastern Connecticut, including the viability of implementing passenger rail service along the New London – Worcester corridor (while accommodating rail freight). Funding continues to be sought through the State Bond Commission to initiate this study.

³ More information on these surveys can be found at www.ctcleanenergy.com/communities/progress

⁴ CESA stands for the Clean Energy States Alliance, an association of more than 13 state clean energy funds operating across the U.S. that are supporting clean energy market development.

- CT DOT has completed The Danbury Branch Electrification Feasibility Study – Phase I (2006), which evaluated alternatives and identifies five options for improving passenger rail along the Danbury-Norwalk rail line. Phase II of this study has been initiated (November 2007) to evaluate the five options and develop an implementation plan.
- The Southeastern Connecticut Council of Governments, in cooperation with CT DOT, will be initiating a study (2008) to determine the feasibility of a New London transportation intermodal center.
- CT DOT has organized a statewide Bicycle and Pedestrian Advisory Committee, to discuss and address bicycle and pedestrian concerns (first meeting was October 10, 2006) and will be updating its 1999 Bicycle and Pedestrian Plan and Bike Route Map in 2007, with the assistance of this committee.
- CT DOT continues to evaluate the needs of the state commuter Park-and-Ride facilities. A Commuter Parking Working Group has been organized to discuss issues such as user needs, maintenance, and regulations and enforcement.

Progress – Smart Growth

- Governor Rell issued Executive Order 15 in October 2006, to coordinate state efforts to revitalize cities, preserve the unique charm of our state and build livable, economically strong communities while protecting our natural resources for the enjoyment of future generations.
- An Office of Responsible Growth and an Interagency Responsible Growth Steering Council have been created. Under the Steering Council two subgroups, the Policy Review Team and the Project Review Team, have been established to assist the Council in its work. The Council will coordinate relevant policy development and capital planning to efficiently utilize state expertise and financial resources.
- Under An Act Concerning Responsible Growth, P.A. 07-239, a Responsible Growth Task Force was created 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 will submit a report with recommendation on these issues to the Governor by February 15, 2008.
- In October 2007, Governor Rell announced \$9.9 million in grants to help purchase or preserve approximately 1,714 acres of open space in 39 cities and towns across Connecticut.
- 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.
- 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. The updated Green Plan can be viewed by visiting www.ct.gov/dep.

Progress – Vehicle Miles Traveled (VMT) Reduction

- A preliminary assessment of a value pricing concept was prepared for the I-95 Branford-Rhode Island Needs Study, see www.ct.gov/dot, click on “Plans, Projects, & Studies,” the “Studies.” This study will be considered for the I-84 corridor Waterbury-Danbury EIS and the I-84/Route 8 Interchange Study.
- The 2005 CT Action Plan reported anticipated GHG reductions of 0.22 MMTCO_{2e} (221,374 tons/year) for 2010 and 0.49 MMTCO_{2e} (492,012 tons/year) for 2020. These projections assumed a 1.5% VMT reduction in 2010 or 1,407,388 (1.5% of 93,825,350) miles traveled and a 3% reduction in VMT in 2020 or 3,066,924 (3% of 102,230,200) miles traveled. The current re-estimate of GHG reductions based on the same percentage reductions in VMT stated above and the latest VMT data result in 0.25 MMTCO_{2e} (251,561 tons/year) in 2010 and 0.56 MMTCO_{2e} (562,299 tons/year) in 2020. These amounts are slightly higher than those reported in the 2005 Action Plan.
- An analysis of the amount of greenhouse gases that would have been emitted if the 2 Million Mile Challenge NuRide Program had not been implemented was also performed. It is projected that 1,620.8 tons/year will not be emitted in 2007 (based upon data from Metropool of 1,365,847 miles traveled removed as of 5/26/07 and an assumption that the removal rate would hold constant through the remainder of 2007). *It should be noted that this number represents the projected amount for 2007 only. The amounts for 2010 and 2020 depend future participation in the NuRide program and cannot be accurately predicted.*

Currently there are 5,115 Registered NuRiders, of which 1,715 (34%) are active.

From Jan 2, 2005 until November 3, 2007:

- 273,556 car trips reduced (136,264 car trips reduced solely because of NuRide)
- Average daily round trip – 24.5 miles
- Average days ridesharing - 3.5 days per week

RA 8: Multi-state Intermodal Freight Initiative

Purpose

To engage multi-state and regional discussions on opportunities to divert a portion of the projected 70 percent growth in regional truck traffic to rail and barge modes in order to reduce significantly the GHG impact of freight transportation. To that end, a goal of 5 percent of truck traffic shifting to rail or barge by 2020 is desirable.

Progress:

- The Bridgeport Port Authority (BPA) has begun an initiative to transport containers by barge between the Ports of New York and New Jersey. This service would be a component of the NY/NJ Port Inland Distribution Network (a short sea shipping initiative). This would help alleviate roadway congestion along the I-95 corridor, thus reducing greenhouse gases. BPA is pursuing implementation activities, such as securing operating agreements. Also, Port Security construction activities for the Bridgeport Regional Maritime Complex, which is the home base for the barge container service, are under construction.
- CT DOT is participating in an I-95 Corridor Coalition “Northeast Rail Operations Study” to identify “chokepoints” along the rail corridor and the opportunity for enhanced use of

rail to transport freight. This study is ongoing and a Phase I report was published in July 2007. This report can be viewed at www.i95coalition.org

- The Capitol Region Council of Governments (CRCOG) has evaluated freight movement within and through the Capitol region, in coordination with CT DOT and the Massachusetts Pioneer Valley Transportation Commission. The final report was published in December 2005 (can be viewed on the CRCOG web site). This evaluation identifies issues and opportunities to reduce the movement of goods by truck and better manage freight movement serving the region.

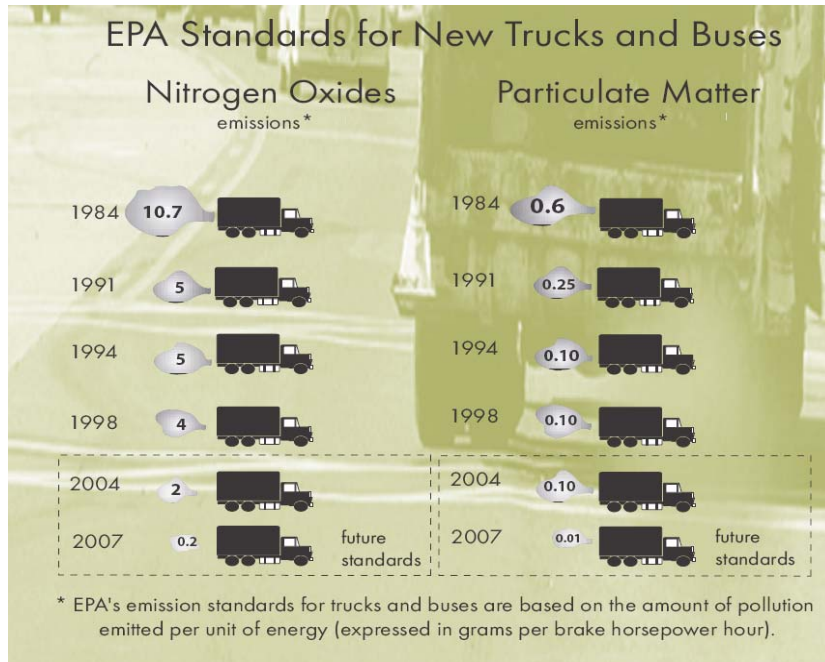
RA 9: Clean Diesel and Black Carbon

Purpose:

Scientists have identified black carbon (BC), a component of diesel particulate matter (PM), as having a large and fast-acting warming impact on the atmosphere. Diesel engines emit roughly half of the BC in the United States. This recommendation provides incentives to accelerate the use of ultra-low sulfur diesel and to accelerate adoption of engine improvements and tailpipe control technology to reduce emissions of BC.

Progress:

- **National transition to ultra-low sulfur diesel (ULSD) fuel.** Beginning in 2007, the sulfur content of non-road diesel fuel, which has contained up to 3,000 ppm sulfur in Connecticut, is being reduced to 500 parts per million (ppm) sulfur. This enhances the sulfur reductions from the change in on-road diesel fuel from 500 ppm to 15 ppm ultra low sulfur diesel (ULSD) that was begun in 2006. ULSD has been available at many retail locations since October 15, 2006 and all on-road diesel fuel must be ULSD by December 1, 2010. This means that:
 - ULSD will enable the use of cleaner technology in new diesel engines; and
 - 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.



- Statewide school bus retrofit legislation.** 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. See also: <http://www.epa.gov/otaq/diesel/index.htm>
- Electrified truck stop established.** A 116-space electrified truck stop has been developed along I-95 in North Stonington. This will reduce emissions from overnight idling by diesel-powered tractor-trailers passing through the state.
- Hartford solid waste facility retrofits equipment.** An agreement with the operators of the Hartford landfill has resulted in emission controls on 17 pieces of off-road equipment used at the site and on 27 recycling collection vehicles associated with its operation.
- Transit buses being retrofitted in Hartford and New Haven.** Retrofit projects are funded and are well underway for 191 transit buses in Hartford and 84 transit buses in New Haven. Diesel particulate filters are being installed. They will join the 31 transit buses in Stamford that were retrofitted with diesel particulate filters in 2001.
- Reducing emissions from indirect sources.** DOT and DEP continue to collaborate on opportunities to promote diesel retrofits, anti-idling campaigns and the use of clean fuels on off-road construction equipment through the amendment of DEP regulations in June

2006 regarding permitting of indirect source of air pollution. The first permit has been issued under this new regulation for road construction project near Uncasville.

- **Anti-idling strategies are being developed.** Strategies to enhance education and outreach regarding idle reduction are under development. New approaches to anti-idling enforcement legislation are being proposed.
- **Diesel Plan finalized and implementation priorities established.** DEP finalized its Diesel Plan as directed by Special Act 05-07. The final diesel plan, along with suggested priorities for implementation, is posted on the DEP web page at: www.ct.gov/dep, search for “diesel plan.”

DEP’s implementation priorities include:

- Improving the environmental characteristics of heating oil by reducing sulfur content to 500 ppm and blending with at least 5% biofuel,
 - Addressing emissions from outdoor wood burning furnaces,
 - Implementing the DEP’s comprehensive anti-idling strategy to address excessive and unnecessary vehicle idling, and
 - Developing a regional voluntary program to reduce emissions from locomotives.
- **State heating oil and off-road diesel fuel sulfur content limits left unchanged.** Legislation was enacted in 2006 (Public Act 06-143) that would allow the sulfur content of heating oil and non-road diesel fuel to be lowered from the current levels of 3,000 ppm sulfur to 1,500 ppm sulfur then to 1,250 ppm sulfur then to 500 ppm sulfur in Connecticut **only after** the last of the states of New York, Massachusetts and Rhode Island have already done so.
 - **Low carbon fuel options are being evaluated.** Strategies for increasing the use of biofuels and other low sulfur fuels are being developed.



Engineering the flow of communication™

Commute Options and Solutions

Edward M. Houghton, Director Workforce Effectiveness
and Transition Services



Why is this important to the Company?

- Employee Effectiveness and Resources
- Fuel Consumption and Air Quality
- Infrastructure Cost and Associated Taxes
- Recruiting and Retention

Why is this important to the Company?

- 25.6% - 90 minutes or more commuting daily
- Stamford Employees - 36.5%
- Cost in Time and Resources
- Stress and Fatigue




Connecticut Climate Change

www.ctclimatechange.com

**Climate Change Public Stakeholder Meeting,
Transportation and Vehicle Efficiency
Nov 27, 2007
Fairfield Board of Education, 8:30 – 12:30**

Summary of Breakout Session Discussion

Question A: What are some strategies, technologies, or incentives that **Government** might use to further reduce greenhouse gas emissions from the transportation sector in Connecticut? Please include ideas on how to measure success.

- DOT needs to refocus/change their missions from road building/maintenance to TOD/Smart growth. Metric – VMT reduction.
 - Increase staff to enable the creation/implementation of forward thinking programs.
- **Government:**
 - More teeth in state plan of C&D, and more OPM staff to implement plan.
 - State should lead by example: telecommuting, drive fuel efficient vehicles
 - Issue equipment and train employees so they can telecommute.
 - Plan to carpool when using state vehicles and when feasible.
 - Increase the guaranteed ride home program for commuters.
 - Marketing and communications: broadcast examples of economic feasibility. Go to clean cities website for list of incentives
 - Create recognition awards.
 - Government studies must include \$ for pilot implementation of recommendations
 - Provide better and more frequent measurements of air quality.
 - Promote car sharing (e.g. subsidize memberships).
 - Need top down leadership in the state to manage transportation issues.
 - Increase transit operating funds.
 - CT CMAQ funds could be used better
 - Agencies need to better coordinate and establish a single goal meeting each of their needs. Better focus
 - Various agencies (DOT, DEP) need to coordinate more when providing state funds for economic developments.
 - Regional approaches are difficult to implement...but necessary.
 - **Regulations:**
 - **Corporate Average Fuel Economy (CAFÉ) standards** should be increased and the motor vehicle corporations should be held to the standards.
 - Mandate pre-post efficiency improvements (e.g. tune ups and tire pressure checks.).
 - Restructure solid waste management so as to provide biomass sewage solids digestion into biogas for further processing into  p H2 and sequestration of carbon in new light weight materials that further additional fuel efficiency.

- Restrict truck traffic during rush hour.
- Look at UBS and World Bank of Scotland.
- Encourage public/private partnerships between corporations/businesses and transit providers. Doesn't have to be financial. (e.g. businesses (Pitney Bowes, Sikorsky) worked w/ GBTA to bring bus service from train station in Bridgeport to Stratford/Shelton).
- **Carbon Offsets:** Require carbon offsets for loss of forest land when roads/transportation projects are developed.
- **Buses:** Improve quality of bus service: upgraded buses, greater frequency, more logical routing. Add regular van/jitney service to meet RR, taking into account the transit times from NYC as well as CT.
 - Add GPS to busses to ensure they stay on schedule and can be located in an emergency.
 - More PR to communities about bus schedules
 - Publish statistics about ridership and develop a municipal or town incentive plan to increase numbers.
- **Mass Transit:** Think outside the box...flexibility, convenience cost.
 - **Smart Highway:** "Disney World" concept of people movers
 - **Incentives** to ride mass transit (e.g. free rides)
 - **Vary the size** of the buses/vans to meet the area ridership needs.
 - Coordinate transportation routes with businesses.
 - EZ pass: implement electronic EZ pass in CT that is free to CT residents.
 - Utilize commuter parking lots with express busses to the trains.
 - **Trolley:** Create a trolley transit to transport people to the trains.
 - **Railroads**
 - Provide zip cars at RR stations
 - Provide bus shelters for metro link
 - Put up a garage for RR station even if town doesn't want it.
 - Encourage reverse RR commuting into towns by allowing overnight parking for employees without penalty.
 - Make shore line east and bus service FREE, since fare box generates only 20-30% of the cost.
 - Provide off-site valet parking at train stations. Phone call on return
- **Low carbon fuel standard:** to reduce the carbon intensity of vehicles fuels.
 - OPM can work with DOT, DEP to develop regulations in coordination with CA and other states.
- **Taxes/Charges:**
 - Need better marketing and communications to the public and companies regarding the tax incentives and credits currently available.
 - Establish the CT traffic reduction tax credit
 - Change federal tax incentives to do away with "just in time" inventory.
 - State match to federal pre-tax benefits for commuters.
 - Gas Tax: send money to our treasury not to foreign countries and anti-democratic leaders.
 - Government should recognize businesses the "do the right thing" with Climate Change Awards, tax incentives, or help the bottom line.
 - Establish an easy pass charge to use the interstates and Merritt
 - Tax large polluters every year through a property and gas tax.
 - Feebate program: tax high emitting cars and use the \$ to provide tax incentives for hybrids and solar panels for power generation.
 - Create a GHG auto tax on gasoline that is distinct from sales tax.
 - Location based tax rate: (ie: if you live closer to your work or HUB = lower real estate tax)
- **Construction:** retrofit all construction equipment with Particulate Matter emissions control devices to maximize diesel reductions. Infrastructure

- Create special truck lanes.
- **Transportation Investments:**
 - Incorporate Carbon emissions into planning and review of transportation investments. DOT and DEP should review investments in term of GHG and other criteria air pollutant emissions from which to develop a comparison to other transportation options (e.g. public transportation).
 - Support cross harbor rail freight tunnel between NJ and NY.
 - Use existing transportation corridors for alternative energy sources (solar and wind) and use it to power a light rail.
 - Support enhanced inter-modal corridor from New Orleans to ME
 - Shift truck traffic to rail.
 - More alternate fuel infrastructure investment (including hydrogen and electricity for plug-ins)
 - Use water taxis in addition to ferries.
 - Incentives for “zip car” or “flex car” use
 - Create more mass transit between Hartford and New Haven.
 - Government needs to push the advancement of vehicle technology.
- **Bikes:** Create safe bike transportation lanes.
 - Require bike lanes with any road improvements or repaving.
 - Top down promotion of “bike culture” (e.g. signs that say “share the road”). This will get car drivers to realize bikers are following laws not just driving/biking in the road without a right to be there.
- **Electricity:** communities can purchase software to cycle computers on and off based on usage = vector software
- **Community Measurement of Carbon Footprints:** ICLEI has a computer model/format for communities to measure their carbon footprints and establish short and long range plans to reduce carbon emissions and measure success rates. Regional efforts/collaborations could be formed.
- **Traffic Lights:** States and communities can invest in smart signals (traffic lights) to reduce wait time when traffic is at low volume.
- **Environmental Impact Statements:** Expand scope of EIS to include global life cycle impacts (e.g. carbon emitted for total life cycle of option or alternative.)
- **Vehicles**
 - Provide incentives for conversion of internal combustion engines that increase efficiency by 5% or more and enable use of at least one renewable fuel.
 - Address vehicle **aftermarket** with incentives to convert to direct cylinder fuel injection to increase efficiency by as much as 20% and enable use of renewable fuels (preferably renewable H2)
 - H2 tangents: In CT the largest resource for making H2 and sequestering the carbon in newer, lighter, stronger materials is now being burned in incinerators. CRRA can confirm the biomass waste content in trash stream.
 - DEP should require separation of biomass in waste stream and combine it with sewage plant solids and thereby make a negative value feedstock to produce H2 and new materials.
 - **Electric Cars**
 - **Global Electric Motor Cars:** Encourage the use of GEM cars by corporations, mass transit and government agencies. www.gemcars.com Good for 5-10 mile commutes. One way to adapt with society and the use of single occupancy vehicles.
 - Subsidize electric cars.
 - Allow electric cars to register in CT.
 - **Hybrids:**
 - Encourage towns/municipalities to support hybrids through town fleet purchases.

- Municipalities should be allowed to provide tax exemption for hybrid vehicles.
- **Infrastructure:** Provide infrastructures for plug-in hybrids or full electrical cars.

Question B. How can we further encourage **businesses** to implement measures to reduce greenhouse gas emissions from the transportation sector? Please include ideas on how to measure success.

- Measurement
- Education
- Tax credits
- Energy credits
- Recognition of leaders and best practices
- Credit should be paid by employers to cover daycare costs to allow workers to carpool or use public transportation more easily.
- Shuttle vans should be provided from train stations to offices.
- Reward cards should be linked to commuter miles.
- Business partnerships
- Plug-in hybrids (when available) should be incentivized.
- Public Service Announcements
- Goals should be set to reduce VMT's
- Share A Ride to Work Day
- Local pledges
- Green Map (like Fairfield's, green areas on town map to show climate actions or pledges by households)
- Website recognition
- CT Climate Change Leadership Awards
- Transportation organizations should nominate businesses.
- One Thing website
- Advertising and plaques for successful companies
- There should be mandatory measures and incentives for zoning laws.
- Tax incentives should be easier to use – like with pre-tax commuter options.
- Case Studies and Pilot Programs
- Encouragement of converting fleets to using alternative fuels by producing data on operations and using economics
- Department of Energy grants
- Increase the number of Clean Energy Task Forces.
- Create an event dedicated to transportation, invite businesses, and bring it back to the community and workplace with the Chambers of Commerce.
- Government tax breaks
- Low interest loans and low insurance rates
- Free parking or close parking
- Presentations by clean cities
- Federal pre-tax credits
- Property management companies should pay for shuttles.
- Corporate challenges
- Make known the value of energy savings in the long term (sustainability).
- Present arguments in business “bottom line” terms – what's in it for them?
- Downtown businesses should encourage walking to local restaurants and businesses and measure their walking miles with pedometers.
- Pledge cards (like Cities for Climate Protection program)
- Delivery vehicles should be more energy efficient.
- Outreach to small communities through the Chambers of Commerce.

- Overnight parking at railroad stations
- Good public relations
- Rotary Awards
- Pledge to reduce emissions in specific ways.
- Use follow-up programs to measure effectiveness.
- Support biking with bike racks, showers, and lockers.
- ZIP cars
- Focus on Auto companies.
- Combine Heat and Power (CHP) on TISL night loads
- Form energy districts to make CHP more feasible.
- Require businesses to send in inventory and project descriptions to reduce emissions.
- Displacement of fossil fuels
- Free air inflation of tires
- Carpool.
- Act instead of just creating ideas.
- Change computer-operating hours.
- Change delivery times.
- Ship more by rail.
- Companies should locate facilities near transit operations.
- CT needs to participate in the “East of Hudson Rail/Freight Operations Task Force”.
- Shuttles to downtown lunch spots during lunch hours
- Increase taxes as cars get older to encourage quicker fleet turnover.
- Carbon and NOx credits
- Expand shoreline east commuter rail service.
- Credit for leasing
- Eliminate inventory taxes that have led to just-in-time business requirements.
- Coordinate local company-run transit with larger transit agencies.
- Get federal and state legislators on the same track.
- State recognition
- Consolidate programs for small businesses.
- Use the Pitney-Bowes example to show that there are viable alternatives to driving.
- The bottom line appeal is that transit time and money is saved and employee fatigue is reduced.
- Employee subsidies
- Parking space charge
- Federal or state mandates
- Information infrastructure should be paid for by the state.
- Yearly, public reports
- Real Estate Tax Abatement: require building developers to include a certain percentage of the property as a common area for telecommuting. Workers would go to these centers close to their homes, like with Georgetown Development.
- Locate car sharing at place of business and get deductible expense.
- Encourage living near place of business.

Question C: How can we further encourage/educate *citizens* to implement measures to reduce greenhouse gas emissions from the transportation sector? Please include ideas on how to measure success.

- Need a behavioral change in society (i.e., utilize public transportation more fully, more walking, bicycle usage, etc.).
- Purchase hybrid vehicles/do not purchase SUVs.
- Education on Climate Change must start at the elementary school

- Adjust driving habits to increase fuel efficiency/reduce GHG emissions (i.e., drive within the speed limits and at a constant speed when possible).
- Combine tasks when making vehicular trips (i.e., multiple errands, work and shopping, etc.).
- Purchase locally grown produce (reduce VMT).
- Make carbon footprint calculations simpler, so that the general public would be more aware of their output and monitor their driving, etc.
- More Fairfield “Green Drinks” type programs in other municipalities statewide.
- Community talks on Climate Change (road show).
- Hold fairs, exhibits on climate change.
- Set up system where individuals can track their own usage/GHG reduction.
- Gift certificates for reducing GHG emissions.
- Inform public on the real cost of commuting (i.e., gas, insurance, car payments, maintenance costs, etc.), so they can make decision to use alternative methods of commuting.
- Citizens should keep their private vehicles well-maintained and properly inflate tires to improve gas mileage.
- Drive less.
- Greater use of commuter parking lot and express bus service.
- Tax incentives for ridesharing or decreasing individual emissions.
- Bus pass or train rewards (i.e., ride 10 times, get one free ride) that would go across transportation lines/groups.
- Company incentives to purchase clean cars/Company and State incentives to live close to a bus line.
- Better marketing that will appeal directly to people to use mass transit.
- GHG labeling and a web-based way to compare cars.
- Electric cars/Allow CT registration of electric cars.
- Results-oriented individuals are encouraged by results not studies.
- Safe bicycle lanes to promote the use of bicycles as an alternative to health club exercise.
- Car sharing (i.e. zip cars), memberships, and education.
- Express bus service in general and express bus service to trains from existing parking lots.
- Recognize “Green” citizens
- Recognize in town/village driving (5-10 miles) versus regional commuting (25-30 miles).
- Reward card for commuter miles - card on a keychain used each time you ride mass transit.
- Community forums - citizens reaching out to citizens, climate conversations, local action networks.
- Broaden the argument – do not just phrase around global warming, but also include cost, health issues, dependency on oil, etc.
- Income tax incentive tied into GHG emissions.
- Increase the gasoline tax
- Reverse auto tax model: newer cars – lower tax; older cars – higher tax.
- DOT/DMV should use educational tools such as training on proper driving habits and video games on how to maximize fuel economy.
- Incentive credits for people who use public transportation (ala frequent flier miles).
- Average fuel economy-based tax rebate (data taken at inspection – car calculates automatically).
- Track sales tax.
- Energy tax.
- Awards.
- Media coverage.

- Employers could provide incentives to employees to live near place of work (i.e., Yale University subsidizes part of a house downpayment if within new Haven City limits).
- Provide showers and lockers at places of work.
- Moratorium on studies – get the trains running (i.e., New Haven-Hartford-Springfield line)
- Public relations campaign to make known to the public new bus routes/schedules via television ads, mailings, and newspaper ads.
- Clearly posted bus stops with posted schedules at every stop.
- Develop public/private partnerships with an internal advocate within the corporations involved.
- Make it easy to use public transportation.
- Grants to schools based upon “Smartgrowth” achievement standard.
- Earmark some percentage of energy tax for public transportation infrastructure.
- Variable tolls (peak, off-peak, and high occupancy).
- Mandate EZ Pass on Interstates. Measure and charge per mileage traveled.
- Provide a free or low cost shuttle to Bradley International Airport.
- Reduce cost of travel on AMTRAK to make it more desirable than driving.
- Have the Governor list towns in terms of per capita VMT and provide monies according to VMT (lowest receiving more/highest receiving less).
- Draw people to live in cities by creating prestigious public schools in high density areas (i.e., grants based upon density).
- More parking spaces at train stations.



Connecticut Climate Change

www.ctclimatechange.com

Participating Organizations

Climate Change Public Stakeholder Meeting, Transportation November 27, 2007 Fairfield, CT, 8:30 – 12:30

1,000 Friends
American Hydrogen Association
CT Center for Advanced Technology
CT Clean Energy Fund
CT Conference of Municipalities
Central CT Regional Planning Association
CT Fund for the Environment
Citizens Campaign for the Environment
Clean Water Action
CT Citizens Transport Lobby
CT Senate
CT Dept of Administrative Services
CT Dept of Environmental Protection
CT Dept of Transportation
Emily Hall Tremaine Foundation
Environment Northeast
Evergreen America
Gifford Park Associates
Greater New Haven Clean Cities Coalition
Hamden
I-deal
Metropool
Milford Environmental Concerns Committee
Norwich Clean Cities Coalition
Office of Policy and Management
Pitney Bowes
Pioneer Valley Photo Voltaics (PV2)
Royal Bank of Scotland
Sierra Club
Sterling Planet
Southwest Regional Planning Agency
Town of Fairfield
Transit for CT
Tri-State Transportation Campaign
Unilever
UTC Power
Westport Clean Energy Committee