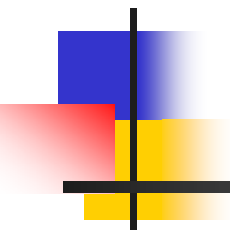


Climate Change Action: Coordinating State and Regional Action



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The Science is Now Compelling

- Need for state action in the absence of meaningful action at the federal level
- Release of State Plan to meet or beat the goals of the NEG/ECP Climate Action Plan.
- Seeking places to form cooperative agreements with other states.



Massachusetts and Regional Emissions in Perspective

- Annual emissions = 19.2 tons per person in MA compared to 26.3 tons per capita in the US and 3.3 tons globally.
- MA emits 1.9% of the total U.S. inventory including all upstream fuel-cycle emissions with 2.4% of the population.
- *Nevertheless, MA state-wide emissions are comparable to the total emissions of whole countries (i.e. Egypt, Austria, and Greece).*



Overall Will Benefit the Massachusetts Economy

- More than half of the industries in MA would benefit and few would be directly harmed. (HVAC systems, computer and artificial intelligent control systems, and communications systems for example, would benefit)
- We have no in-state energy supplies and pay more for our energy than many states (we have more to gain than some other states).



The Future

- Forecasts indicate a 30% increase in CO₂ emissions in New England by 2020, in the absence of mitigating action.
- In 2001, MA was about 7% over the 1990 baseline of 108.1 million tons per annum of CO₂ (or about 115.632 million tons of normalized CO₂ – adding in other GHG pollutants).
- Some sectors increasing faster. Transportation sector CO₂ to grow 32-42% by 2020.



State GHG Reduction Goals

- **Short-term Goal:** Reduce regional GHG emissions to 1990 emissions by 2010.
- **Mid-term Goal:** Reduce regional GHG emissions by at least 10% below 1990 emissions by 2015 (2020 in regional plan).
- **Long-term Goal:** Reduce regional GHG emissions sufficiently to eliminate any dangerous threat to climate; current science suggests this will require reductions of 75%-85% below current levels.



Massachusetts' Approach:

Integrating Climate Policy across Programs

- New England Governors and Eastern Canadian Premiers Climate Action Plan
- State Climate Change Action Plan to implement our share of the regional plan
- Power Plant Clean-up: 4 Pollutant Regulations
- Green Restructuring:
 - Renewable Portfolio Standards,
 - Renewable Trust Fund,
 - Efficiency Funds,
 - New Power Plant Siting Rules for Clean Plants,
 - Emissions Disclosure



Massachusetts State Sustainability Program

To implement “Lead by Example”

- Established by Executive Order (438)
- State government to serve as a model by promoting sustainable practices that reduce the state's environmental impact and save taxpayer dollars.
- With tens of thousands of employees, hundreds of facilities, thousands of buildings and vehicles, and a multi-billion dollar budget, state government can achieve significant savings in energy, water, and materials use through greater efficiency and effective long-range planning.



Massachusetts State Sustainability Program (cont.)

- Established a Coordinating Council, of 16 agencies and offices, to direct, govern and manage the program. (Co-chaired by the Environmental Affairs and Administration and Finance).
- Focus on reducing state emissions of greenhouse gases, increasing recycling rates at state facilities, sustainable design and construction, purchase of environmentally preferable products, energy efficiency and water conservation, and use of integrated pest management techniques.
- Sustainability Implementation Guide and issuing annual reports on the Program's progress.



State Commitments

- State to Lead by Example
 - Achieve a 25% reduction in greenhouse gas emissions from state buildings and facilities by 2012 without compromising government services or working conditions, through improved energy efficiency, the addition of renewable resources, the acquisition of energy efficient vehicles and the use of lower-carbon fuels.
 - Renewable Energy Purchase for state facilities (20-25%)
 - Study options for renewables and efficiency in state buildings and facilities.



State Commitments

- Develop and Maintain a State Greenhouse Gas Inventory
- Acquire Clean, Fuel-Efficient Vehicles for the State Fleet (new policy to be announced)
- Clean Up the State Watercraft fleet (water and air quality benefits and less expensive to operate)



State Commitments

- New State Facilities to Adhere to Sustainable Efficient Design and Construction Standards
- Expand State Renewables Purchase for state buildings
- Incorporate Longer-Range Energy Savings into State Purchasing Decisions
- Stimulate the Market for Environmentally Preferable Products



Cities and Towns as Climate Protection Partners

- Encourage Communities to Join the Cities for Climate Protection™ Campaign (CCP)
- Work with communities to establish targets for local reduction and benchmarks for progress.
- Smart Growth Planning for efficient location decisions
- Local Waste Management and Recycling Goals
- Efficient Traffic Signals and Lighting
- Green Schools Initiative (locations and buildings)



Business, Industry and Institutions as Climate Protection Partners

- Create a CO₂ Registry for the state and possibly for the region.
- Promote the Development and Use of New Energy Products and Technologies
- CO₂ Offset for New Plants
- Create an Emissions Bank & Trading Program



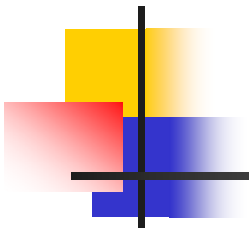
Reliable, Sustainable and Efficient Energy – Renewables and Efficiency

- The RPS has a long-term goal of 15 percent of the energy supply to be provided by clean, renewable resources by the year 2020.
- The NEG/ECP goal is to reduce the energy intensity of carbon emitted per unit of power by 20% by 2025.



Reliable, Sustainable and Efficient Energy Use

- Massachusetts Renewable Energy Trust Fund
- Remove Barriers to Clean Distributed Generation
- Work with Utilities to Promote Residential Efficiency
- Implement a Biomass Fuels Policy to use low or zero carbon fuels, preferably ones grown in-state or in-region.
- Continue to Build Support and Provide Incentives for Energy Efficiency
- Promote Renewables through creative and successful implementation of the Renewable Portfolio Standard
- Bring New Technologies and Systems to the Market through the MRETF



Energy Efficient Transportation Choices

- Transit oriented development, denser housing patterns and zoning reform to allow old style NE towns again.
- Special effort to increase housing near transit.
- Disclose CO₂ impacts of transportation decisions.
- Work to disclose CO₂ impacts of land use decisions
- Seek programs that send a clearer price signal about the environmental costs of driving
- Maintain and Expand Public Transit service



Efficient Clean Vehicle Technologies

- Continue to Require and Provide Incentives for Cleaner and More Fuel Efficient Vehicles
- Require Cleaner Vehicles and Fuels in Our Public Transit Fleets
- Advocate for Public Incentives for Purchase of Fuel Efficient and Clean Alternate Fuel Vehicles
- Advocate for Aircraft Efficiency at a Regional and National Level
- Support the Clean up of Marine Engines through Retrofits, Accelerated Engine Turnover and the Use of Alternative Fuels.



Reducing Impacts on Our Natural Resources

- Host Interdisciplinary Workshops on Adaptation: on Natural Resources
- Promote a New Forest Vision That Maintains Carbon Sinks and Expands Programs to Plant and Care for Trees
 - Better tree selection to increase carbon storage and to adapt to climate change
 - Make carbon storage in soils and plants one criterion in the management plan of state forests and other public lands of the Commonwealth.



Working Towards Integrated Land Policies

- **Forestry**

- Sustainable Practices
- Use of State and Federal Lands
- Ecosystem/ Habitat Protection
- Species Protection/ Biodiversity

- **Land Use**

- Sprawl and Deforestation
- Maintaining Intact Systems



Reducing Impacts on Our Natural Resources

- Promote a Municipal Policy of No Net loss of Trees
- Implement the Recommendations of Biomass Working Group
- Make Our Farms Full Partners in Climate Protection
 - A renewed effort to increase the amount of locally grown food. This will help preserve farmland and reduce transportation-related carbon dioxide.
 - Reduction in the use of fertilizers.
 - Alteration in agricultural practices in order to reduce carbon dioxide, methane and nitrous oxide emissions. New techniques could include methane recapture and pesticide reductions.
 - Seek opportunities to site wind turbines on agricultural land to increase the economic viability of our farms.

“Near Term” Climate Strategy

- Power system
 - Modern gas-fired power plants added to the system,
 - Offsets for reductions
 - Renewable energy (Incentives and Mandates),
 - And energy efficiency, plus
- Transportation
 - Hybrid vehicles – more rapid market penetration, especially of the most efficient hybrids
 - Better-performing public transit

Longer Term Climate Strategy

- Power System
 - Working w/other Northeastern States to evaluate a power sector cap.
 - More renewable energy
 - More energy efficiency
 - Hydrogen Studies
- Transportation
 - Smart growth – starting with examination of current planning process and case studies to model and explore how to do it better
 - Expanded transit system, transit-oriented development
 - Vastly improved vehicle efficiency through hybrids, other technologies
- Shift to hydrogen
- Carbon sequestration