



Multi-Pollutant Air Quality Planning in Region 1

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Region 1 Air Quality & State Policy Context

Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont

Ozone Nonattainment

Persistent ozone nonattainment in the NY-NJ-CT area

State Climate & Clean Energy Policies

Region 1 states have ambitious, multi-sector, economy-wide, long-term climate policies and plans.

Some examples include:

- Economy-wide carbon emissions goals
- Global Warming Solutions Acts
- Regional Greenhouse Gas Initiative (Power Plants)
- Transportation Climate Initiative
- Renewable Portfolio Standards

Nonattainment Areas for the 2008 Ozone Standard

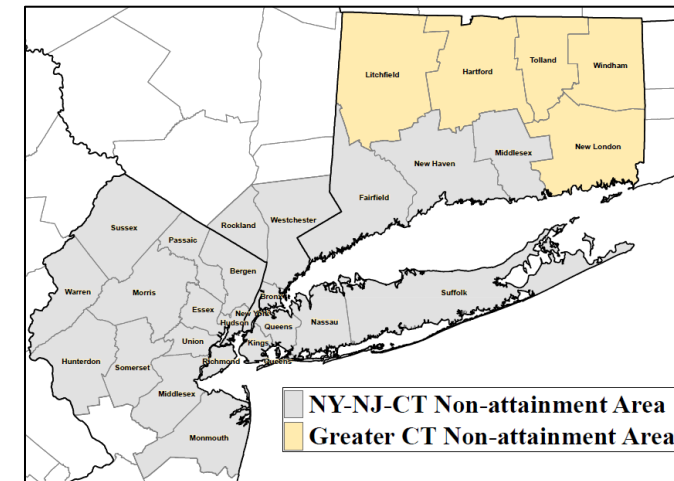


Image source: CT.gov

Percent Reduction in Greenhouse Gas (GHG) Emissions Economy Wide by 2050*

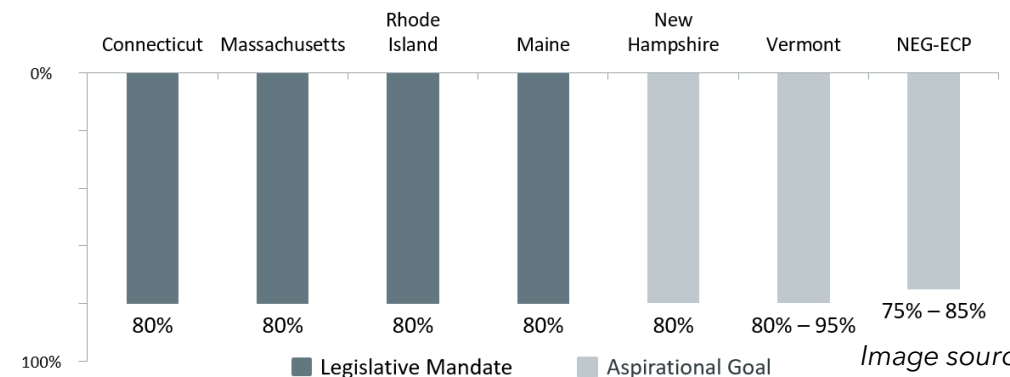


Image source: ISO-New England



Planning Challenges

Limited Ozone Management Options Remain: While the region has adopted a broad range of control measures to reduce the precursors to ozone emissions, nonattainment challenges remain. What are the measures and pathways that can enable progress towards attainment?

Understanding Policy Interactions: What is the relationship between traditional ozone precursor reduction measures and greenhouse gas (GHG) reduction measures in lowering ozone levels in Connecticut? What are the co-benefits and disbenefits of GHG reduction measures and air quality management strategies to each other?

Accounting for Co-Benefits: When developing climate and air quality management strategies, can we systematically account for these interactions to develop more cost-effective and robust strategies?

Providing Analytical Support: How do we most effectively support states in understanding these co-benefits and how they can most effectively coordinate their climate and air quality management strategies?

Improving State-Level Multi-Pollutant Planning in Connecticut with GLIMPSE*

Regional Applied Research Efforts (RARE) Project, FY21-22

ORD Project Leads: Dan Loughlin, Chris Nolte; R1 Project Lead: Shutsu Wong

CT Department of Energy & Environmental Protection Lead: Tracy Babbidge

Problem: CT is struggling to meet 2008 and 2015 National Ambient Air Quality Standards (NAAQS) for ozone and has exhausted most traditional control measures for NO_x and volatile organic compounds

Question: Can tools and strategies used to meet climate goals support CT's efforts to improve air quality?

Approach: Use GLIMPSE to evaluate air quality, climate and energy implications of various policy pathways

***GLIMPSE = GCAM Long-term Interactive Multi-Pollutant Scenario Evaluator**



Improving State-Level Multi-Pollutant Planning in Connecticut with GLIMPSE

Project Benefits

- Support CT's ozone attainment planning efforts through holistic, systems analysis of state clean energy and climate policies and their multi-pollutant, environmental impacts
- Enhance GLIMPSE modeling tool development so that GLIMPSE can more effectively meet state and regional analytical needs for air quality planning
- Demonstrate the benefits of integrating clean energy strategies (EE & RE) into criteria pollutant planning

Next Steps with GLIMPSE

Continue GLIMPSE Application with Connecticut

- Leverage modeling and decision support expertise from ORD, regional staff's knowledge of air quality and climate challenges, and state staff's understanding of "on the ground" factors, such as state policies and capacity retirements.
- Transfer GLIMPSE modeling capabilities to Connecticut, which has dedicated a staff member to learning GLIMPSE and assisting with modeling activities of this project
- Apply lessons learned to support other air and climate planning efforts

Building Regional Office capacity with GLIMPSE

- Develop expertise at the regional level to assess regional air quality and climate impacts from national, regional, and state policies
- Assist states in developing a proficiency with GLIMPSE
- More fully understand how GLIMPSE can be used to quantify the potential role of EE & RE in attaining air quality standards



Future Directions

- Translate the emissions output by GLIMPSE into air quality and health impacts
- Explore use of GLIMPSE as part of attainment demonstrations
- Assess other scenarios that may challenge state's environmental management goals, including changes that may be broader than air and climate policies
- Incorporate related priorities identified through ongoing regional planning processes:
 - Regional Science Priorities List
 - Regional Climate Adaptation Plan