Climate Change: Risks, Rewards, Resiliency (R3)  
Continuing the Regional Greenhouse Gas Initiative (RGGI)  

A&WMA-NES Conference  
Framingham, MA  
October 27, 2016  

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EPA’s GHG Reporting Program

https://www.epa.gov/ghgreporting

- October 30, 2009, EPA published rule for mandatory GHG reporting from sources that emit >25,000 metric tons of carbon dioxide (CO₂) equivalent per year
- An estimated 85% - 90% of total U.S. GHG emissions from 8,000+ facilities are covered
- Most small businesses fall below the threshold and are not required to report GHG emissions
NHDES Amendment to Env-A 900

• Env-A 907.02 Annual Emissions Reporting Requirements eff. 7-18-15
  • submit on or before April 15 of the year following the calendar year
  • (d)(1) For each emissions unit at a stationary source subject to Title V and Env-A 609, actual annual emissions of:
    – c. CO$_2$e
EPA’s Action for Existing Power Plants

• The President directed EPA to:
  – build on state leadership;
  – provide flexibility;
  – take advantage of a wide range of energy sources and technologies

...to build a cleaner power sector
EPA’s CPP timeline

Feb 2016 – SCOTUS stayed enforcement
Sept 2016 – DC Court oral arguments
Sept 2018 – final State plans due
Jan 2022 - implementation
**CPP Benefits**

- By 2030, reduce U.S. CO$_2$ emissions from the power sector by > 30% from 2005 levels
  - Significant reductions begin by 2022
- Investments in renewable technologies have already:
  - added jobs in the solar industry 10 times faster than the rest of the economy, with one job added every 20 minutes
  - Added jobs that increase the energy efficiency of homes, buildings and equipment
- By 2030, the average American family will save about $7 on their monthly electric bill (more than $80/year)
CPP Benefits

• Each year, avoid an estimated:
  • 3,600 premature deaths
  • 1,700 heart attacks
  • 90,000 asthma attacks
  • 300,000 missed workdays & schooldays
• Lead to net health & climate benefits worth an estimated $26 billion to $45 billion in 2030
CPP Co-Benefits

• Cut hundreds of thousands of tons of harmful particle pollution, sulfur dioxide and nitrogen oxides as a co-benefit
  • By 2030, emissions of sulfur dioxide from power plants will be 90% lower compared to 2005
  • Emissions of nitrogen oxides will be 72% lower
  • From soot and smog reductions alone, for every $1 invested, families will see up to $4 in health benefits
Cost-Benefit Analysis - Future Federal Rules


• Use of a social cost metric to determine the impacts of new environmental/efficiency rules, upheld in unanimous circuit court decision

• EPA may use the social cost of carbon to estimate the climate benefits of rulemakings. Cost currently = $36 per metric ton.

• 7th U.S. Circuit Court of Appeals ruled (August 2016) the government acted appropriately in using the metric
NH Benefits

• Maintain tourism by reducing impacts on:
  • sea level rise
  • Fall foliage
  • ski industry
  • maple sugaring
  • forest industry
  • fishing
State Leadership 2014

• Updated RGGI
  – More stringent
  – Lower regional cap
CO₂ Emissions (tons) from Applicable Sources
Regional Trends
CO₂ Emissions (tons) from Applicable Sources
New Hampshire

[Bar chart showing CO₂ emissions from different sources in New Hampshire from 2008 to 2015.]
How were emissions reduced?

• Increased energy efficiency (see nhsaves.com), due in part to investment of RGGI funds
How were emissions reduced?

• Increased generation from non-emitting sources:
  – Wind,
  – Hydro, and
  – Nuclear
How were emissions reduced?

• Fuel switching from oil and coal to natural gas due to relatively lower natural gas prices
Flexible RGGI Cap-and-Trade Program

1. Identify Sources to be Covered
2. Determine Total Emissions from Covered Sources & Set Cap
3. Issue Allowances (1 per ton) & Distribute (Auction)
4. Trade
5. Sources Cover Emissions with Allowances
What Are the Benefits of a Cap and Trade Approach?

• Certainty that a specific **regional** level of emissions will be achieved and maintained over time (even with economic growth)

• More regulatory certainty, more compliance flexibility, and lower transaction costs for sources

• Fewer administrative resources needed by industry and government

• Drives down costs, making further improvements feasible

• Complements other Clean Air Act provisions (e.g., NAAQS) to help protect local air quality
**By the Numbers: Programs Funded By Cumulative RGGI Investments**

<table>
<thead>
<tr>
<th>Category</th>
<th>To date</th>
<th>Lifetime</th>
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<tbody>
<tr>
<td>Participating Households</td>
<td>3.7 million</td>
<td>$2.9 billion</td>
</tr>
<tr>
<td>Energy Bill Savings</td>
<td>$395 million</td>
<td>10.3 million</td>
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<tr>
<td>Participating Businesses</td>
<td>17,800</td>
<td>11.5 million</td>
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<tr>
<td>Megawatt Hours Saved</td>
<td>1.8 million</td>
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<tr>
<td>Equiv. Cars off Road</td>
<td>245,000</td>
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<tr>
<td>Workers Trained</td>
<td>3,700</td>
<td></td>
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<tr>
<td>mmBTU Saved</td>
<td>2.9 million</td>
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</tbody>
</table>
Chart 2: RGGI Power Sector Pollution Reductions

- RGGI Power Sector CO₂ Emissions (Millions of Short Tons)
- RGGI Region GDP (Billions of Chained 2009 Dollars)


- CO₂ Emissions (9 states)
- GDP (9 states)
NH’s Plan

• Continue to implement RGGI + complementary RPS + new EERS

• Ongoing RGGI 2016 Program Review Process
  – Amended Model Rule Target Date: December 31, 2016
  – RGGI Public Stakeholder Meeting Materials at http://www.rggi.org/design/2016-program-review/rggi-meetings
RGGI 2016 Program Review

• RGGI states have identified several key items for discussion with stakeholders

• These include but are not limited to:
  • CO$_2$ emissions reductions – cap stringency
  • Flexibility mechanisms
    • Offsets
    • Cost Containment Reserve
    • Banking
    • Compliance Periods
IPM Modeling

• RGGI States using IPM modeling to inform the future design of RGGI

• Two Reference Cases were prepared
  – Clean Power Plan (CPP) New and Existing (CPP N+E)—Mass-based goals in non-RGGI states for existing sources and new sources complement
  – CPP Existing (CPP E)—Mass-based goals in non-RGGI states for existing sources and information to date on proposed EPA leakage set-aside

• Scenario modeling:
  – Iterative process to analyze potential impacts of changing RGGI design elements and to inform decision making
  – Does not reflect a preference for any specific policy
  – Provides general information on trends, not precise predictions

• Modeling informed by stakeholder comments to date
Modeled Caps

Million Tons CO2

- RGGI Cap (CPP Ref)
- 2.5% Cap Decline 2024
- 2.5% Cap Decline
- 5% Cap Decline

Years: 2016 to 2031
Modeling Results – Allowance Prices
VW Settlement

“defeat devices” in approx. 580,000 2009-2016 vehicles (over 5,000 sold/leased in NH) – violation of CAA – excess NOx emissions

Proposed Settlement includes:

1) Buyback, Lease Termination, and Vehicle Modification Recall Program
2) National ZEV Investment Plan
3) Environmental Mitigation Trust Fund

Anticipated court hearing on final approval of settlement – Oct 18th
Anticipated roll out of Settlement Program – Fall 2016
Questions

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• EPA Website
  http://www2.epa.gov/carbon-pollution-standards