

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

A&WMA-NES Conference

Framingham, MA

October 27, 2016



Joe Fontaine, RGGI Program Manager

603-271-6794 joseph.fontaine@des.nh.gov

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. CO₂e



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. CO₂ 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

<http://thehill.com/policy/energy-environment/290859-court-backs-obamas-climate-change-accounting>

- 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



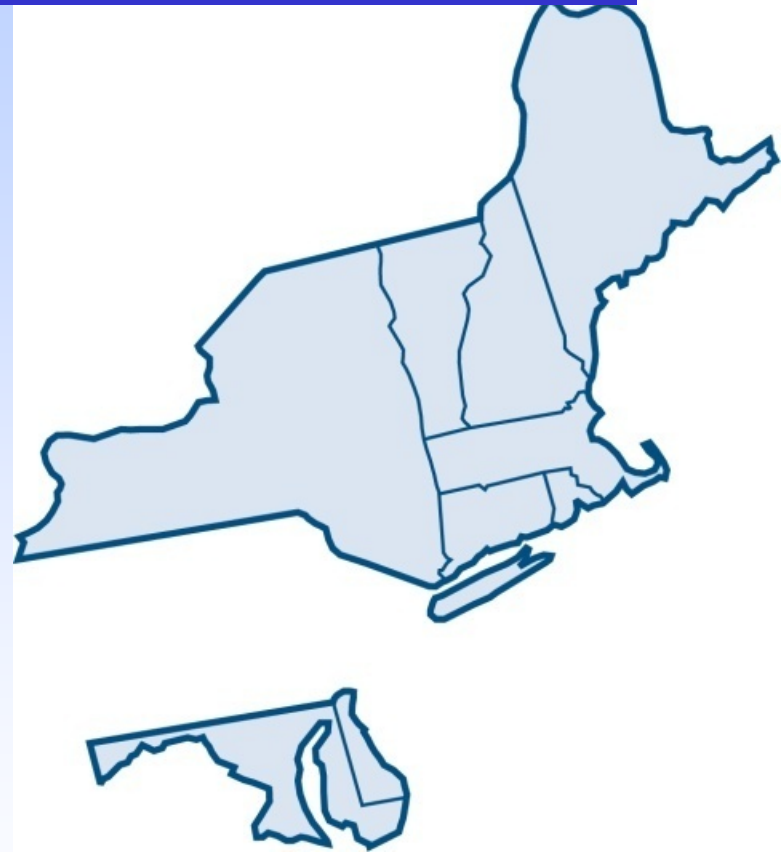
NH Benefits

- **Maintain tourism by reducing impacts on:**
 - **sea level rise**
 - **Fall foliage**
 - **ski industry**
 - **maple sugaring**
 - **forest industry**
 - **fishing**



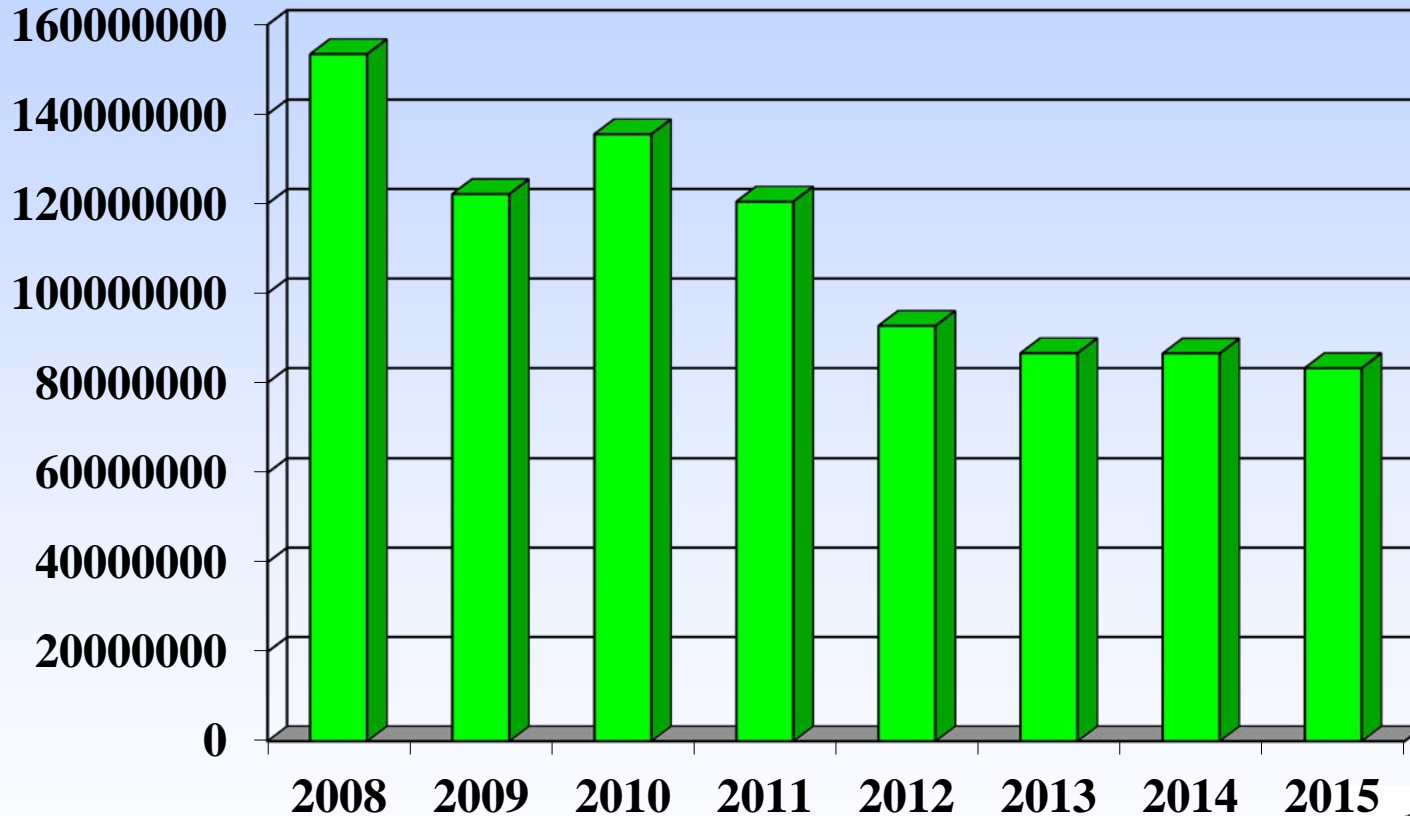
State Leadership 2014

- Updated RGGI
 - More stringent
 - Lower regional cap

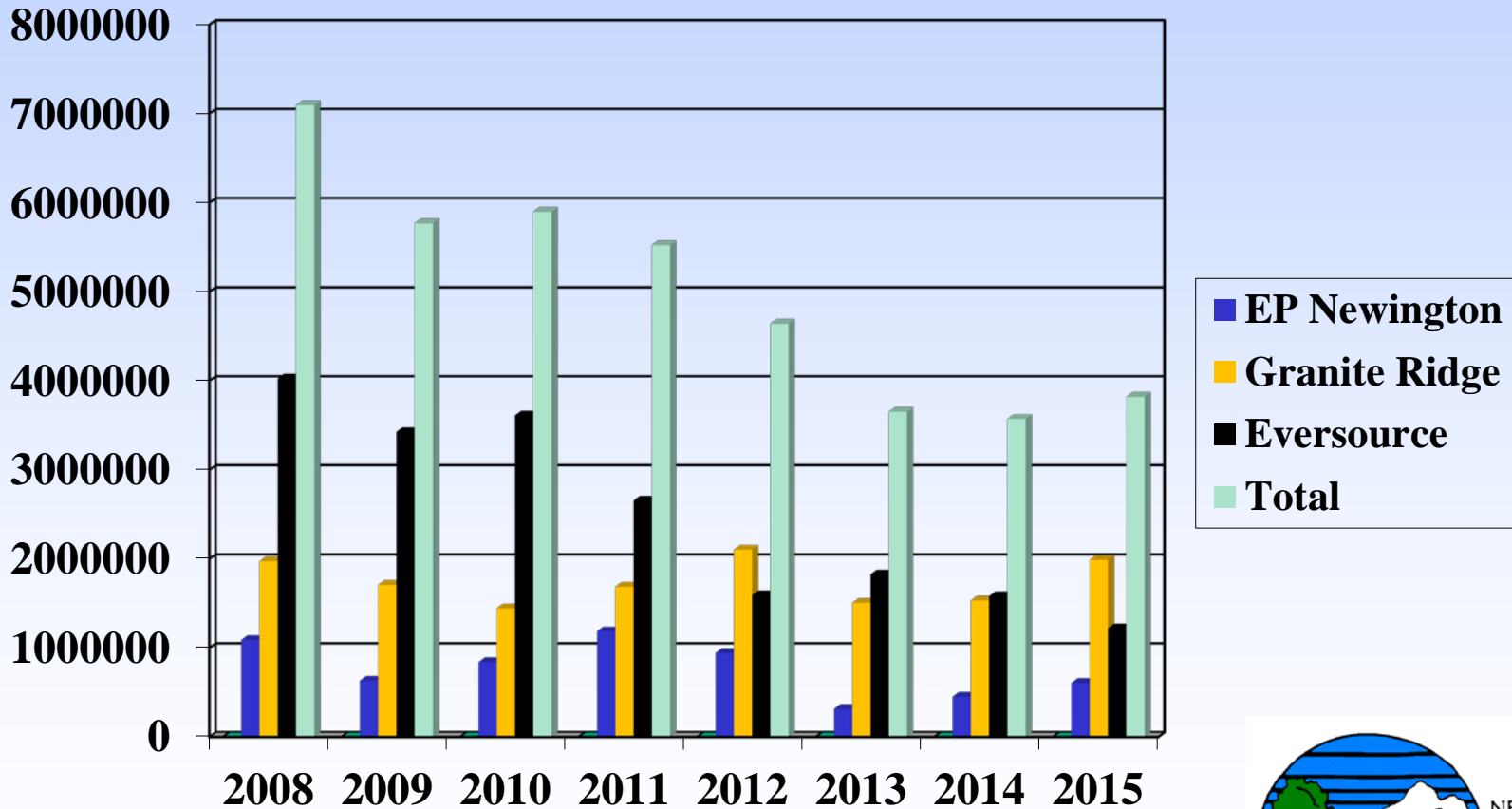


CO₂ Emissions (tons) from Applicable Sources

Regional Trends



CO₂ Emissions (tons) from Applicable Sources New Hampshire



How were emissions reduced?

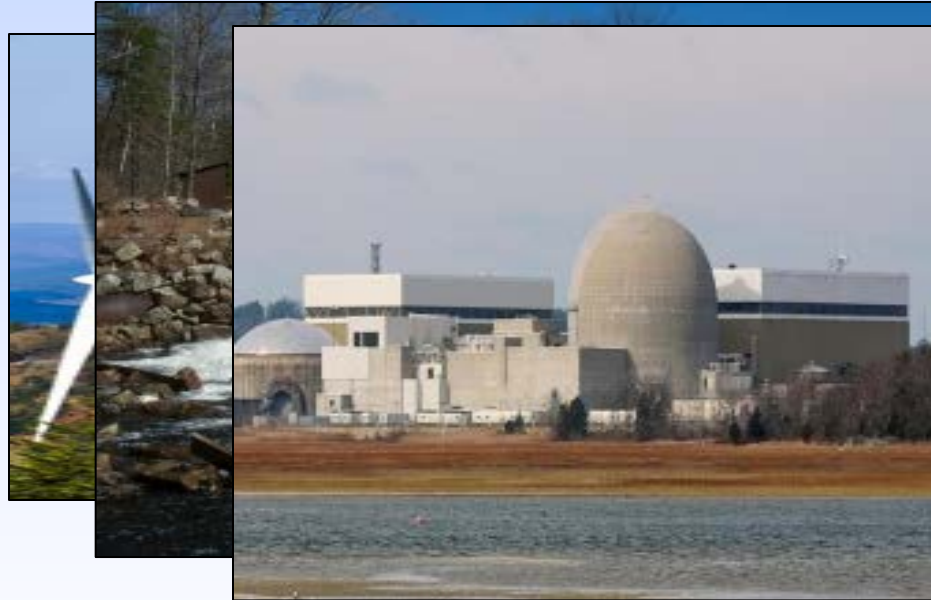
- **Increased energy efficiency (see nhsaves.com), due in part to investment of RGGI funds**



How were emissions reduced?

- Increased generation from non-emitting sources:

- Wind,
- Hydro, and
- Nuclear

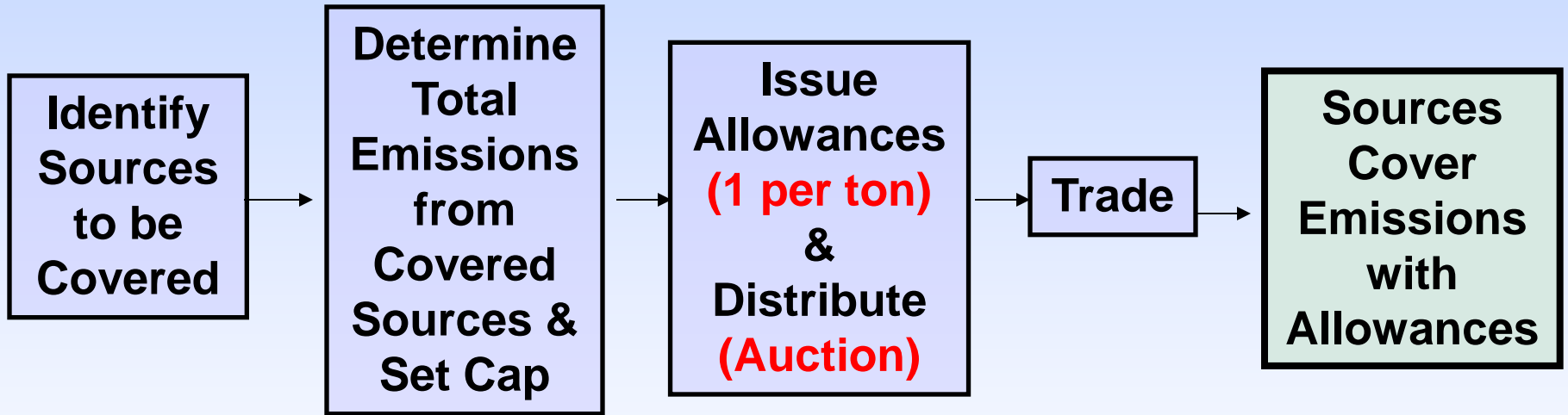


How were emissions reduced?

- Fuel switching from oil and coal to natural gas due to relatively lower natural gas prices



Flexible RGGI Cap-and-Trade Program



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



Participating Households
To date: 3.7 million



Energy Bill Savings
To date: \$395 million
Lifetime: \$2.9 billion



Short Tons CO₂ Avoided
To date: 1.3 million
Lifetime: 10.3 million



Participating Businesses
To date: 17,800



Megawatt Hours Saved
To date: 1.8 million
Lifetime: 11.5 million



Equiv. Cars off Road
To date: 245,000
Lifetime: 1.9 million

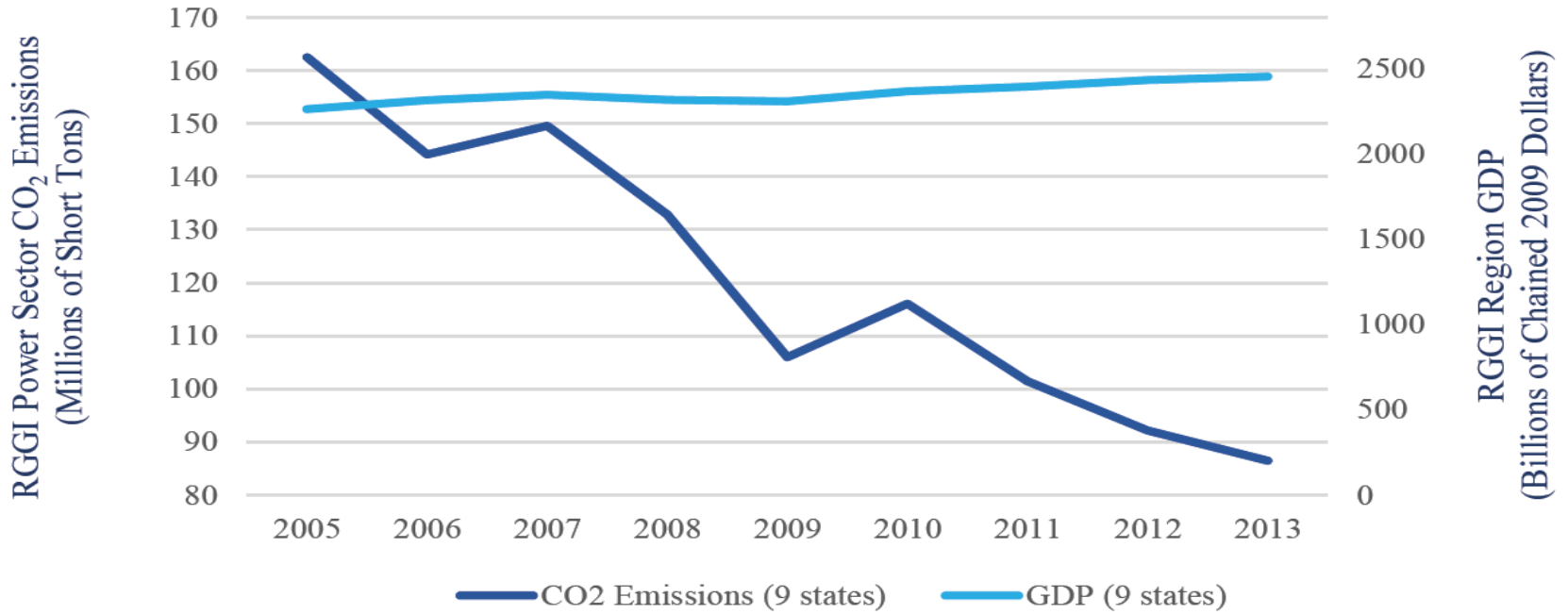


Workers Trained
To date: 3,700

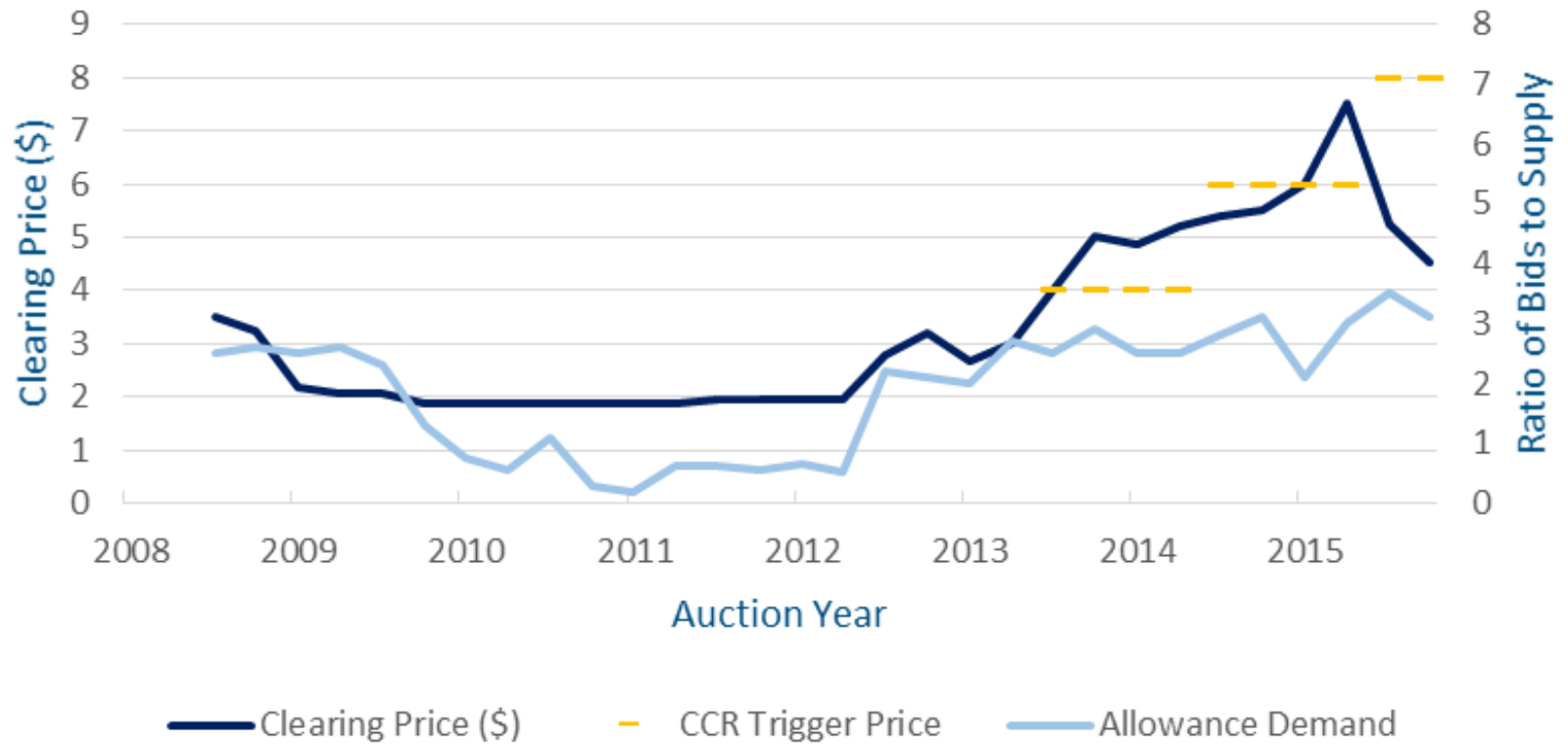


mmBTU Saved
To date: 2.9 million
Lifetime: 48.7 million

Chart 2: RGGI Power Sector Pollution Reductions



RGGI Auction Clearing Prices and Allowance Demand Summary



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:
 - CO₂ emissions reductions – cap stringency
 - Flexibility mechanisms
 - Offsets
 - Cost Containment Reserve
 - Banking
 - Compliance Periods

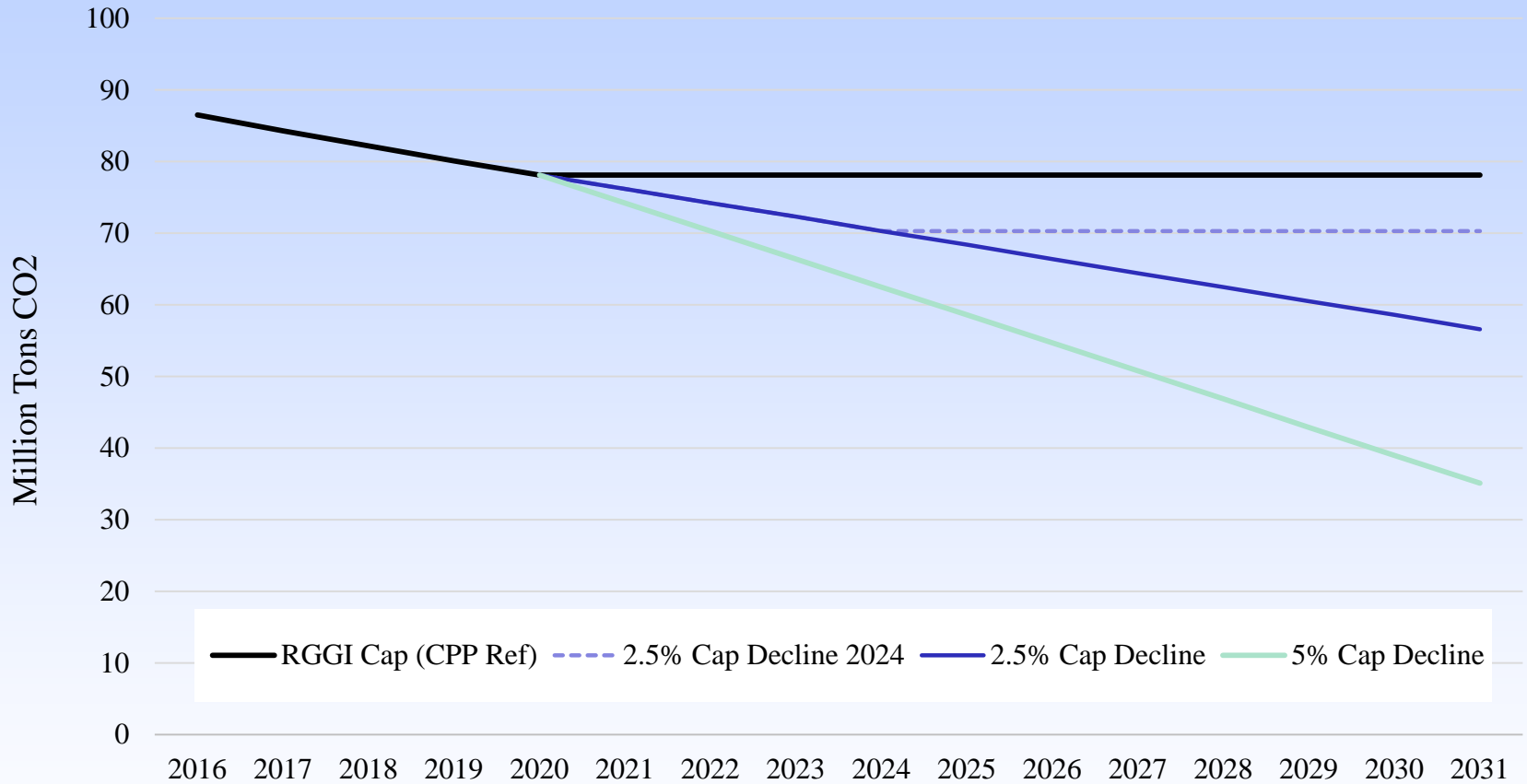


IPM Modeling

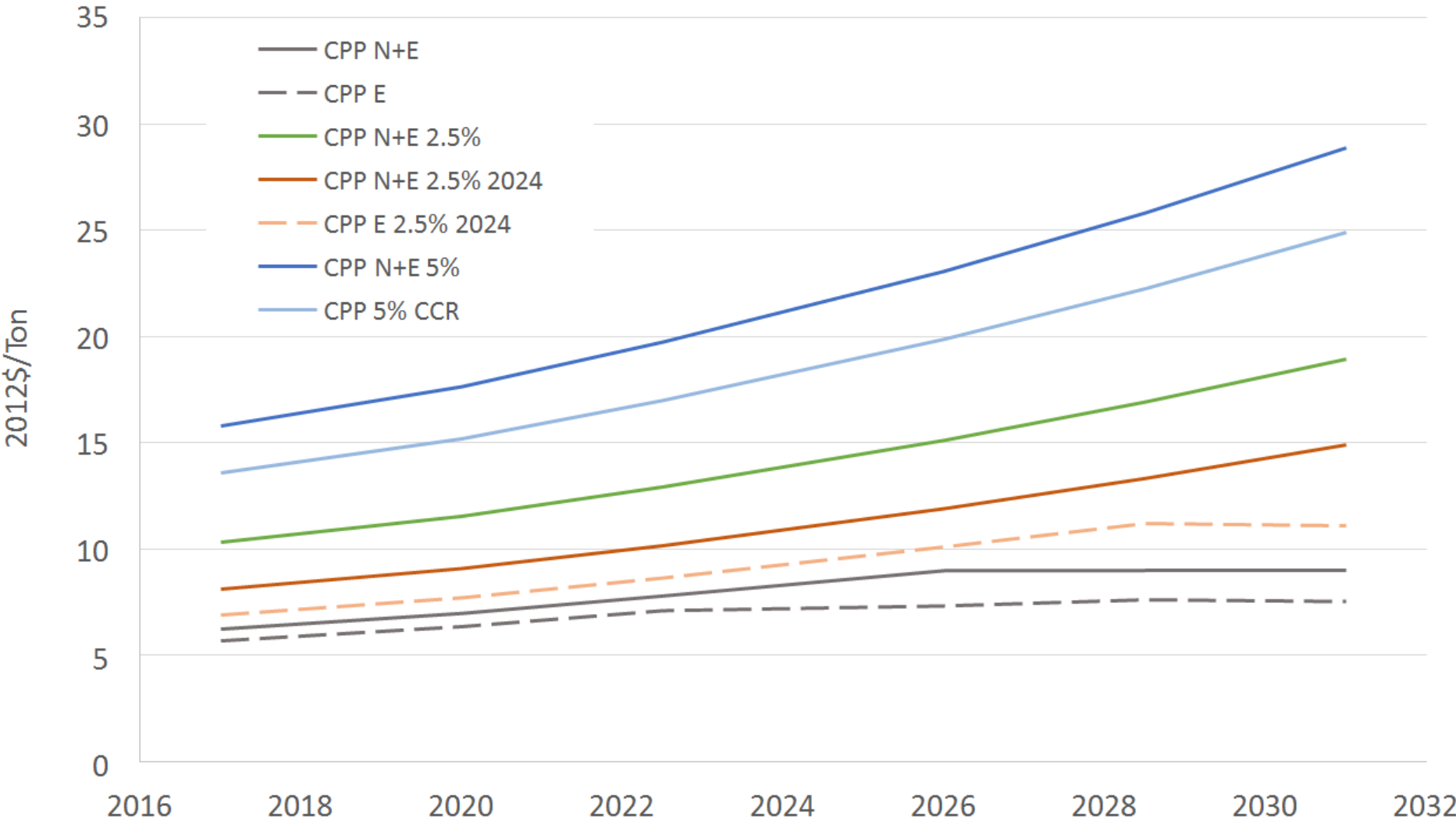
- RGGI States using IPM modeling to inform the future design of RGGI
- Two Reference Cases were prepared
 - Clean Power Plan (CPP) New and Existing (CPP N+E)—Mass-based goals in non-RGGI states for existing sources and new sources complement
 - CPP Existing (CPP E)—Mass-based goals in non-RGGI states 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



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

- Joe Fontaine, RGGI Program Manager
 - (603) 271-6794
 - joseph.fontaine@des.nh.gov
- EPA Website
 - <http://www2.epa.gov/carbon-pollution-standards>

