



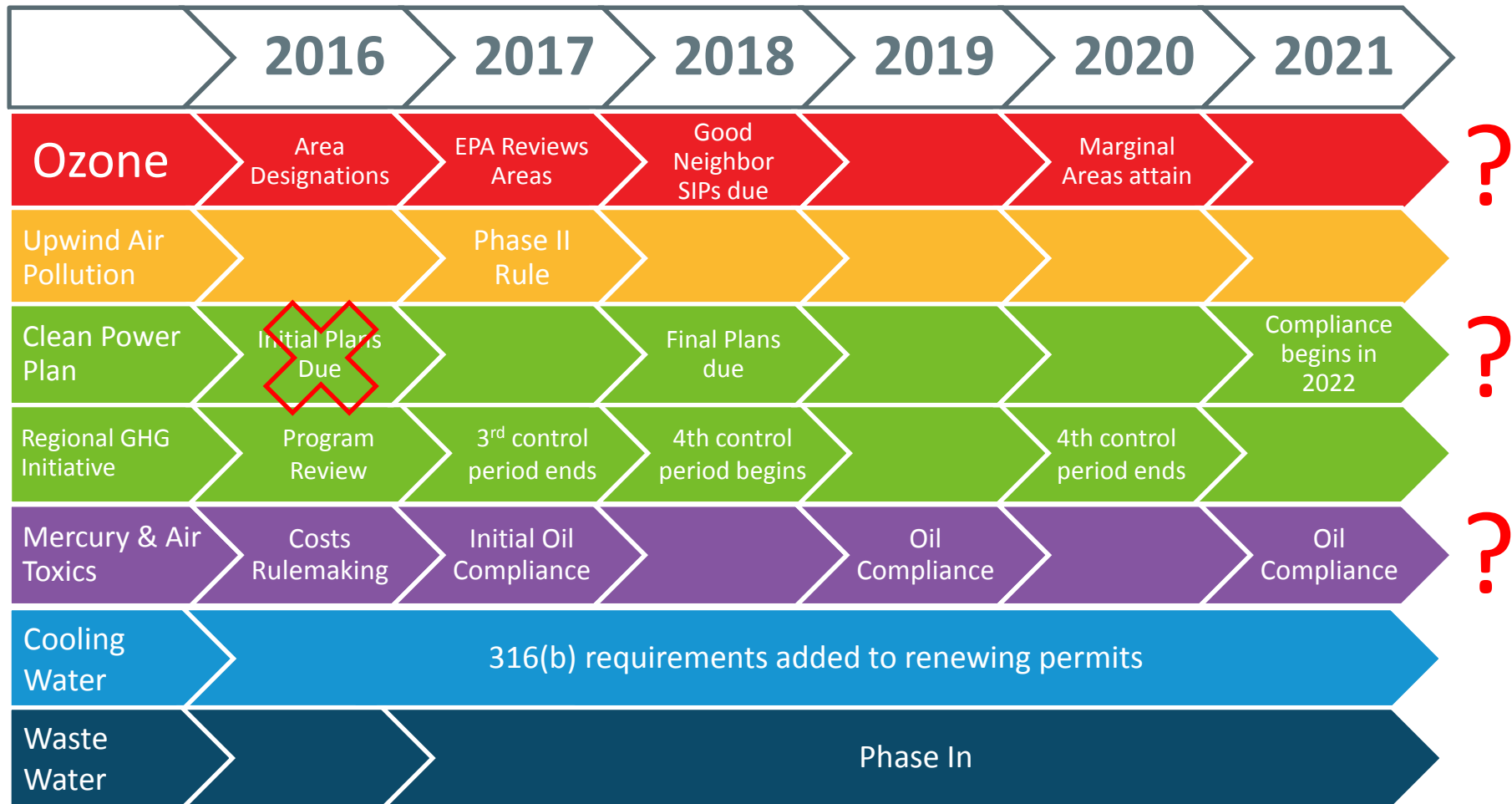
Environmental Regulatory Update

Environmental Advisory Group

Patricio Silva



Major Regulatory Actions Impacting Electric Generators



Potential Environmental Regulatory Shifts Affecting Electric Power Sector

Several Major EPA Rules May Be Reconsidered or Challenged

- **Clean Power Plan §111(d) & New Source GHG Standards §111(b)**
- **2015 Paris Global Climate Change Agreement**
- **Mercury & Air Toxics Standards §112**
- **Cross State Air Pollution Rule Update for 2008 Ozone Standard (October 2016)**
- **Other technical standards and policy guidance**

Other Areas of Possible Reconsideration

- **National Ambient Air Quality Standards**
 - Withdraw proposed standards, implementation schedules
 - Attempt rescission or easing of existing particulates, ozone standards
- **Deemphasize Renewable, Efficiency Incentives & Standards**
 - Eliminate federal new renewable energy, end-use energy efficiency, demand-side energy management measures
 - Eliminate federal electric vehicle incentives
 - Eliminate DOE loan guarantees and research and development

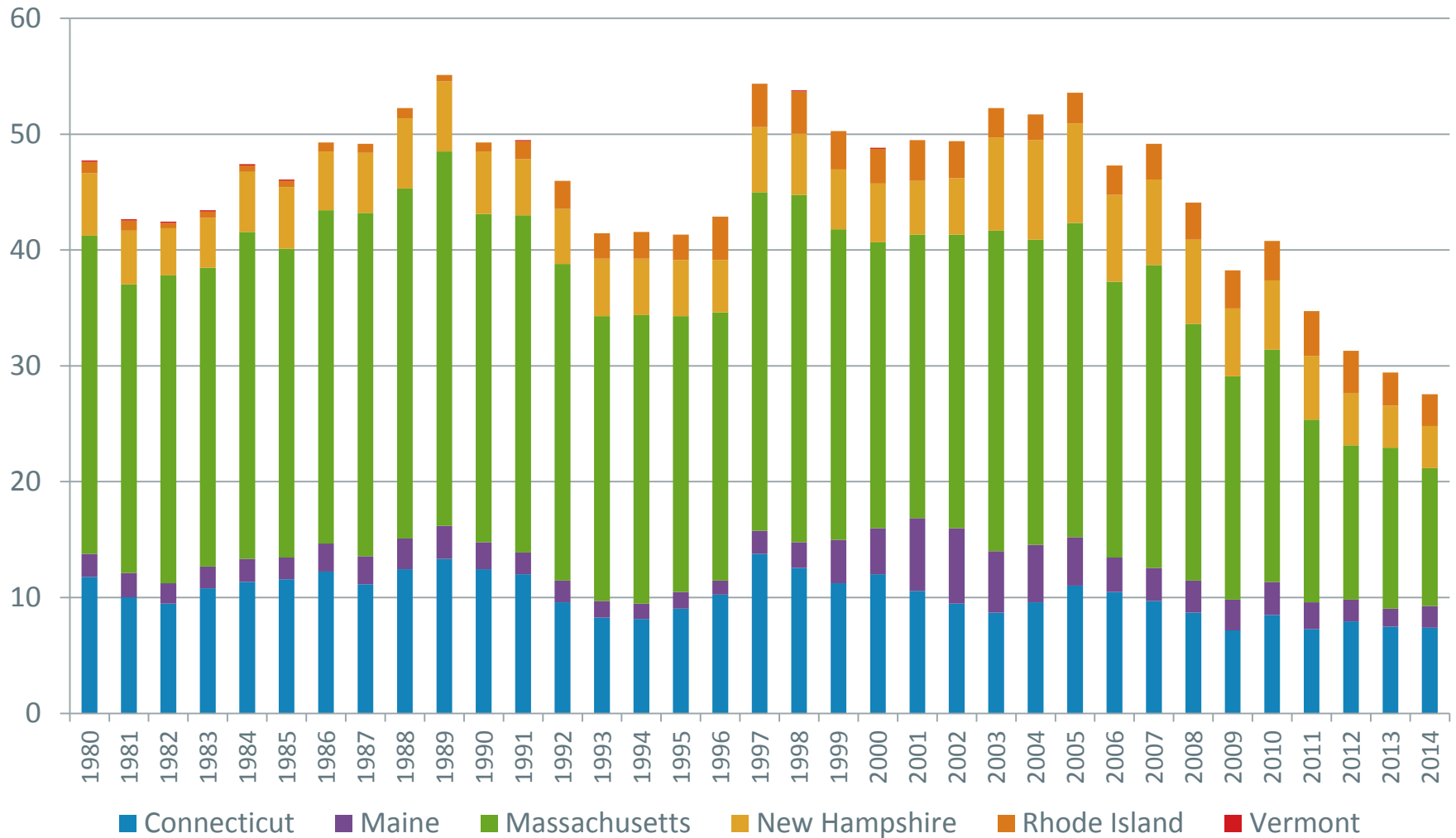
REGIONAL POWER GENERATION ENVIRONMENTAL METRICS

Systems Emissions Have Declined* with a Changing Fuel Mix and Transmission Upgrades

Year	NO _x	SO ₂	CO ₂
2001	59.73	200.01	52,991
2014	20.49	11.68	39,317
2015	18.86	9.11	40,312
% Reduction 2001–2015	↓ 68%	↓ 95%	↓ 24%
% Change 2014–2015	↓ 8%	↓ 22%	↑ 2.5%

**CO₂ emissions rose in 2015 attributable in part to retirement of Vermont Yankee in 2014*

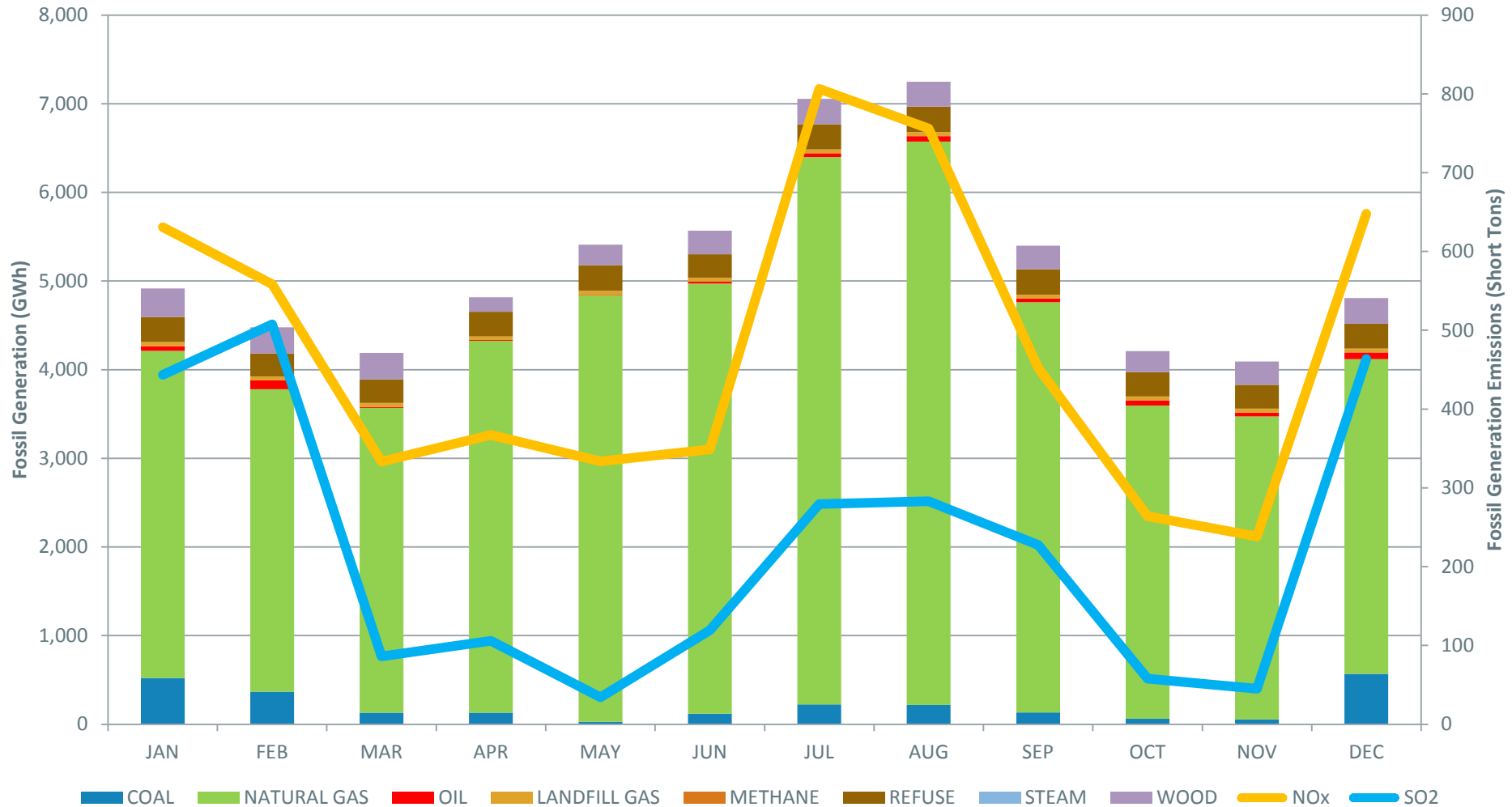
EIA: New England Electric Power CO₂ Emissions, 1980-2014 (Million Short Tons)



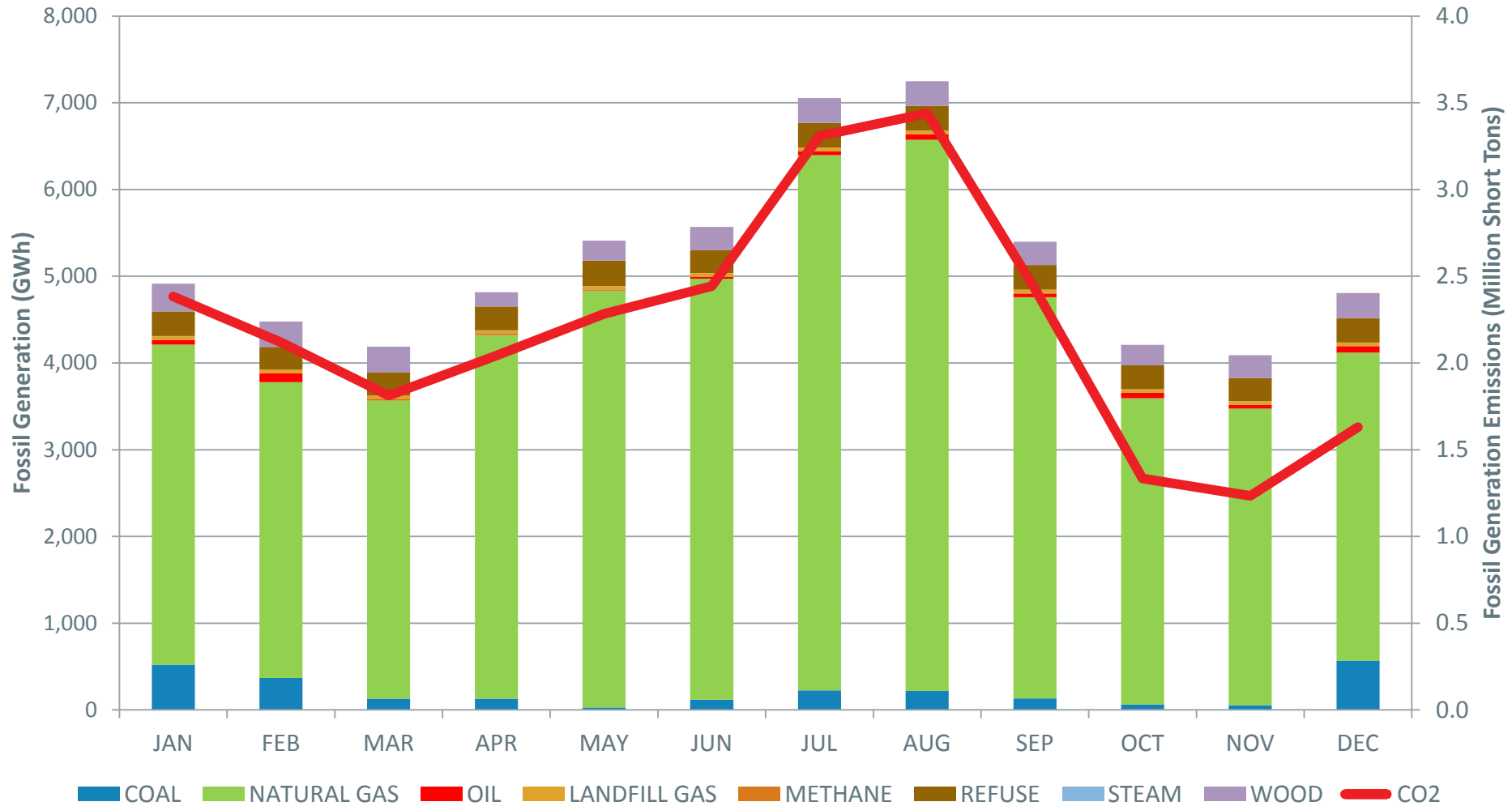
Source: Energy Information Administration

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New England All Fossil Monthly Generation (GWh) & NO_x, SO₂ Emissions (Short Tons)



New England All Fossil Monthly Generation (GWh) & CO₂ Emissions (Million Short Tons)



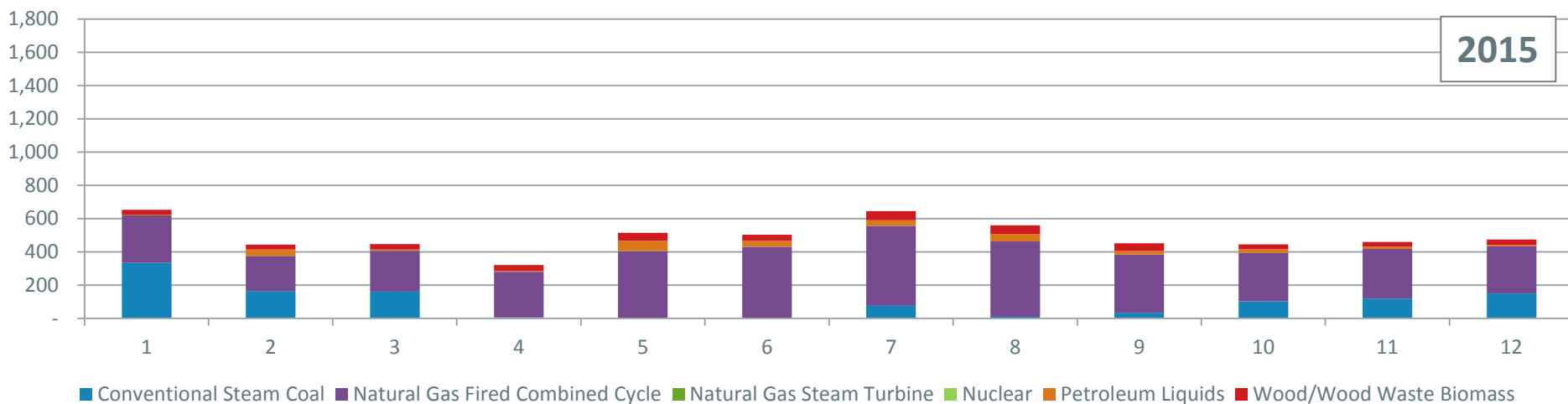
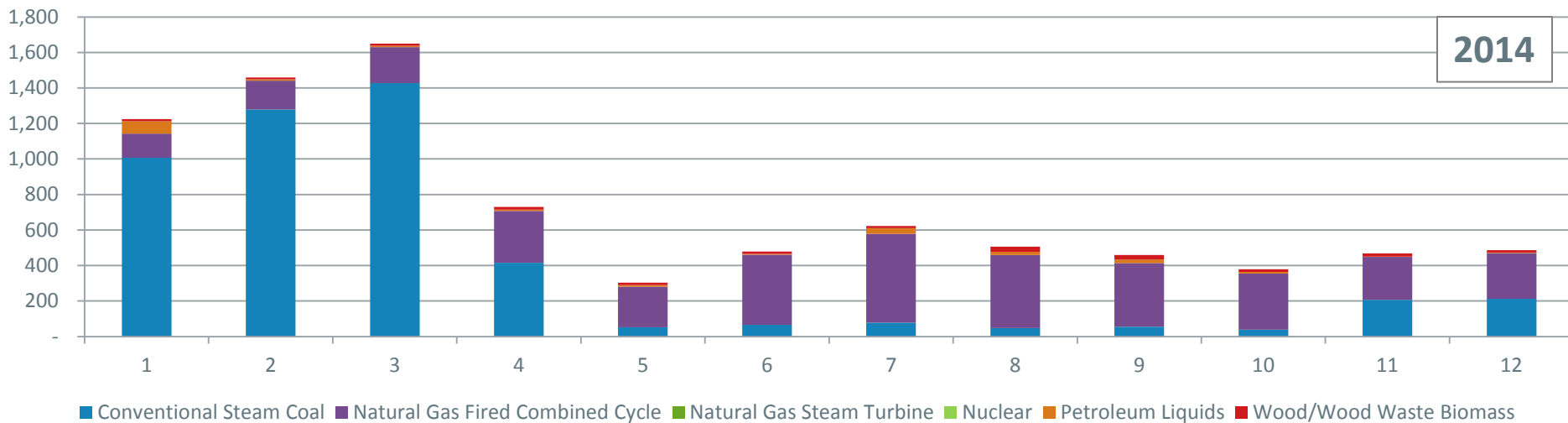
Source: EPA

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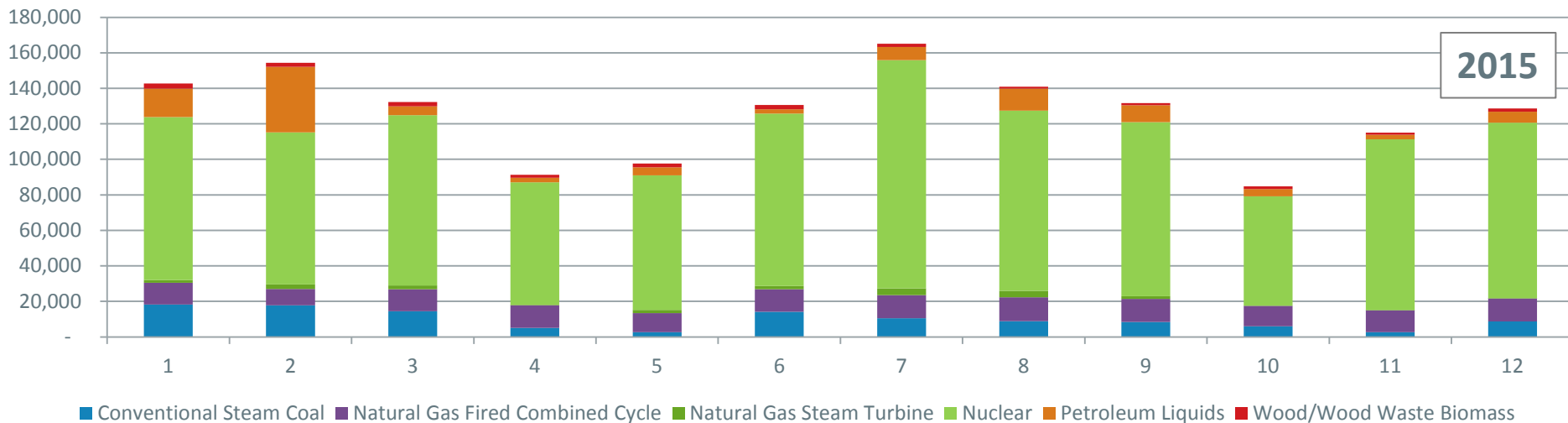
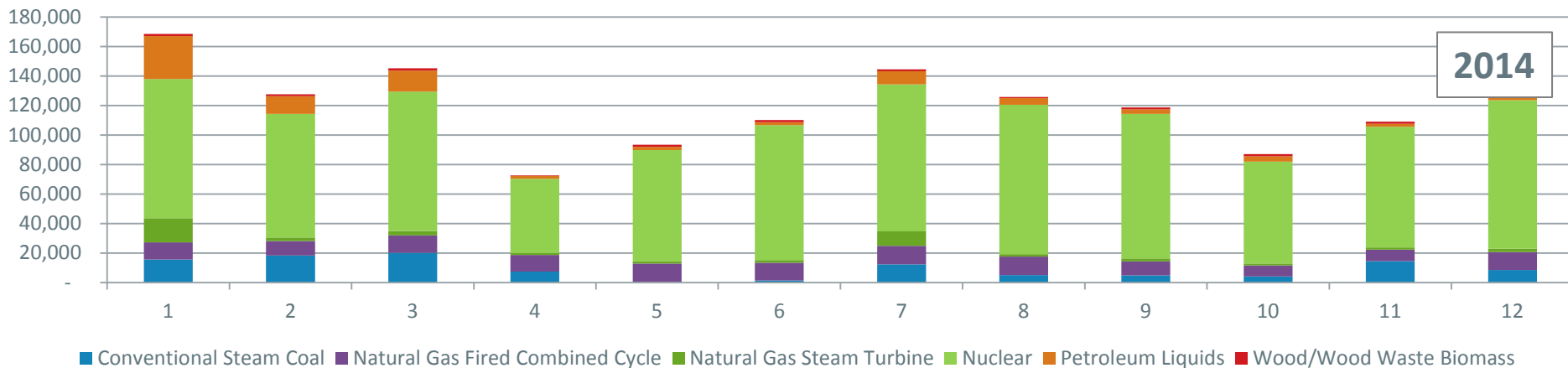
EIA: Water Consumption for Power Generation in New England (million gallons/Month)

Steam thermal consumptive use declining, Combined cycle increasing



EIA: Water Use for Power Generation in New England (million gallons/Month)

Nuclear water use in once through cooling predominates in region



SHIFT IN FEDERAL REGULATORY POLICY PROCEDURES



Regulatory Freeze of Regulations Pending Review

- **January 20, 2017:** presidential memorandum issued to all executive departments and agencies postponing for sixty days the effective dates of all regulations already published in the federal register but had not yet taken effect
- **January 26, 2017:** EPA issued final rule postponing effective dates of 30 final rules that met freeze criteria
- A single rule, specific to Rhode Island, in the region is affected:
 - Approval and Promulgation of Implementation Plans: Rhode Island Clean Air Act Infrastructure Plan and Federal Implementation Plans 82 FR 2237 (January 9, 2017)

Expediting Environmental Reviews of High Priority Infrastructure Projects

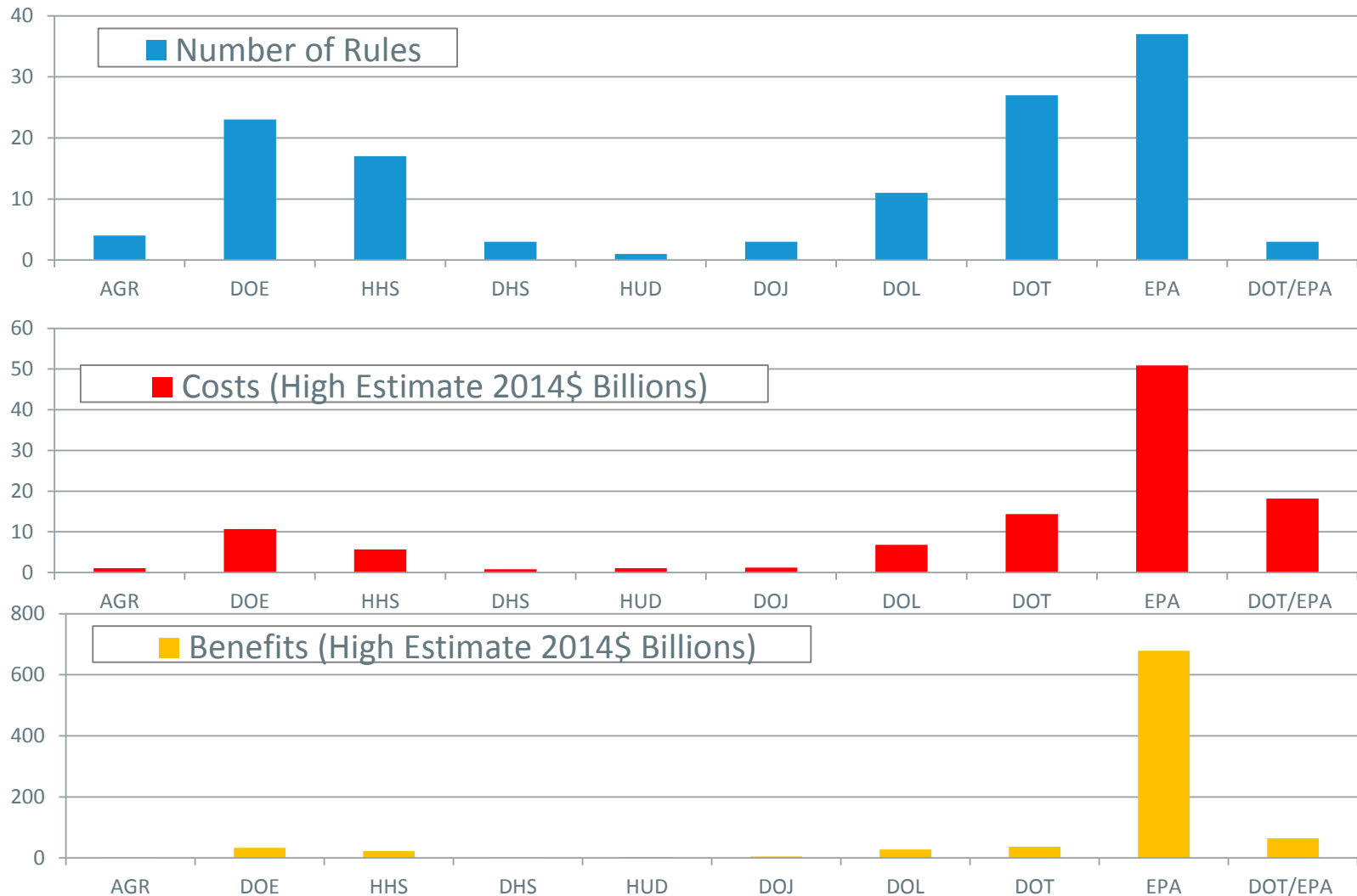
- **January 25, 2017:** executive order designates projects improving the *electric grid*, telecommunications systems and repairing and upgrading ports, airports, pipelines, bridges and highways
 - ‘Emergency & National Security Projects’ priority list includes 50 projects
 - 6 transmission line and renewable projects, all outside New England
- For high priority infrastructure projects, the Council of Environmental Quality (CEQ) must:
 - Establish expedited procedures and deadlines “in a manner consistent with law” for completing environmental reviews
 - Coordinate environmental reviews with the applicable federal agencies

Reducing Regulation and Controlling Regulatory Costs

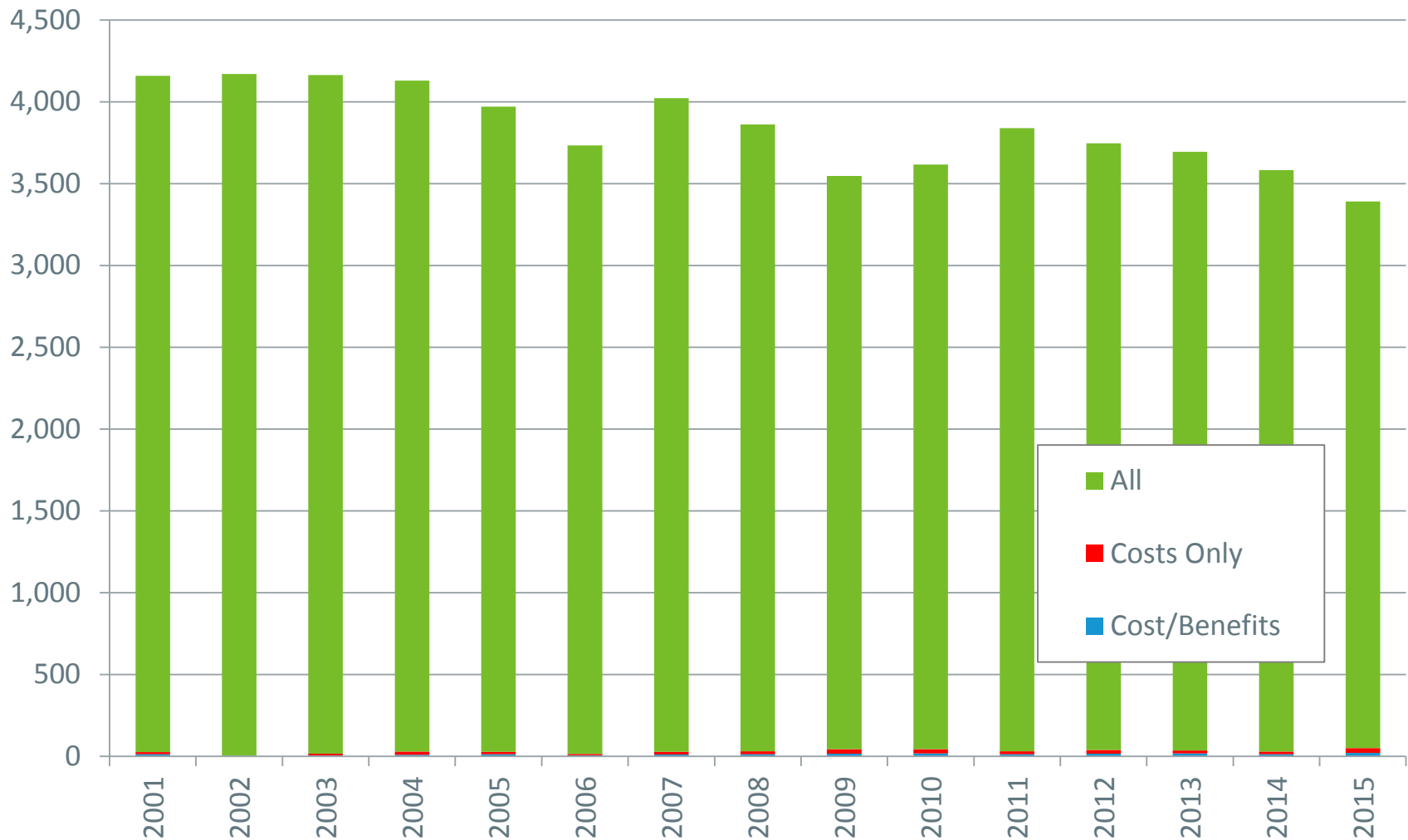


- **January 30, 2017:** Executive Order requires federal departments and agencies (including EPA) to eliminate two existing rules for any new rule proposed
 - Definition of rule includes any guidance or procedure
- Compliance cost of existing rules slated for replacement must exceed projected costs for new rule
- **February 2, 2017:** Office of Management & Budget (OMB) issued interim guidance focusing on significant actions with costs \$100 million or greater
 - *Regulatory actions overturned by enacted laws (Congressional Review Act) qualify for savings*
- Compliance cost analysis of existing and new rules could add time required to new rulemaking, and conflict with Administrative Procedures Act requirements:
 - Less than 1% of final rules published between 2005-2015 have cost/benefit analysis
 - Additional OMB guidance expected
- Majority of EPA regulations have specific deadlines for issuance by law and low ongoing costs after initial capital costs are incurred

Major Federal Rules By Agency, 2005-2015 (#, Estimated Costs & Benefits (Billions \$2014))



All Final Federal Rules, Rules with Costs, Cost/Benefit Analyses (2005-2015)



MERCURY & AIR TOXICS STANDARDS

Mercury & Air Toxics Standards (MATS)

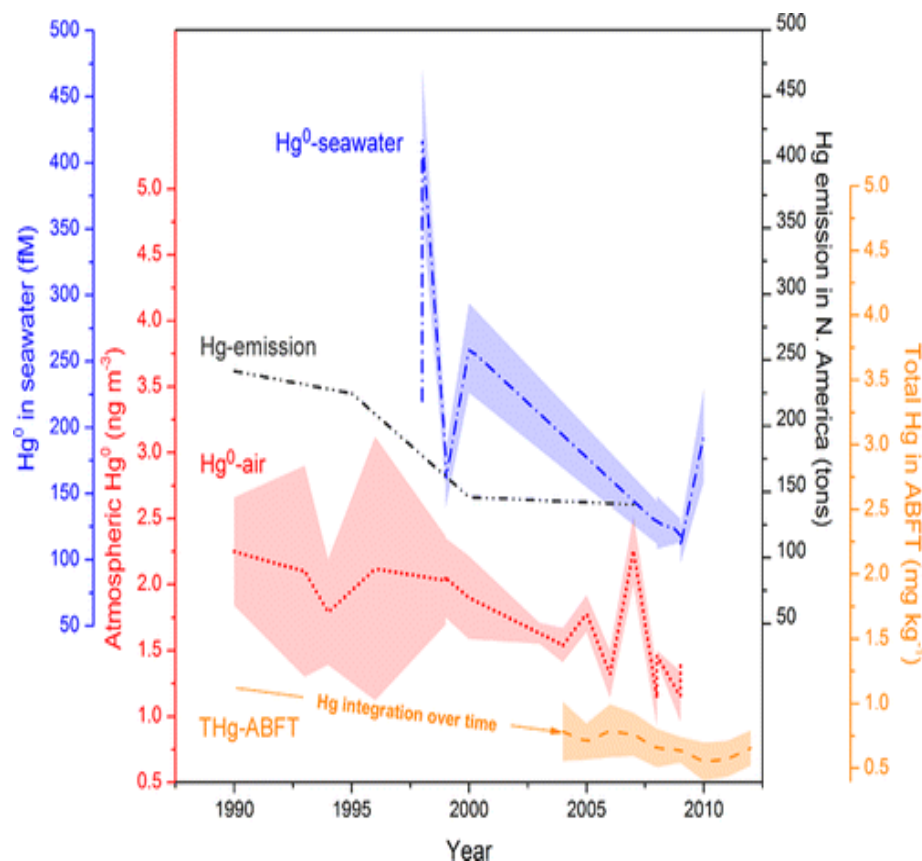
Litigation Involves Cost Justification Finding (April 2016)



MATS Implementation & Litigation Continues

- All affected generators in New England in compliance with applicable MATS emissions standards
 - Reduced air toxics emissions from New England generators
- **March 2017:** final briefs due in remaining litigation involving 2016 cost benefit, analysis for MATS required in *Michigan v. EPA*, 135 S. Ct. 2699 (2015)
- Arguments not yet scheduled

Mercury Reductions Observed in Atlantic Ocean Fish Stocks





OZONE REGULATORY UPDATE

EPA Finds Several States Failed to Submit Needed Rules for 2008 Ozone Standard

Regionwide Potential Impacts from Failures to Submit

- **February 3, 2017:** under the Clean Air Act, EPA determined 15 States (including some in the Ozone Transport Region) and the District of Columbia failed to submit needed rules updating their State Implementation Plans (SIPs) for the 2008 ozone standard (75 ppb)
- All New England States have missing rules and are at risk for escalating sanctions under the CAA within 18 to 24 months unless they take action

Escalating Sanctions Imposed If Rules Not Approved Within 2 Years

- New England states missing a mix of hydrocarbon and nitrogen oxide regulations
- A permitting sanction, increasing offsets required for permitting a new or modified source will be imposed after 18 months (September 6, 2018)
- If the rule deficiencies are not cured within 24 months (March 6, 2019), EPA must issue a federal implementation plan for the nonattainment area(s)

EPA Proposes Denial of Petition to Add Upwind States to Ozone Transport Region (82 FR 6509)

EPA Proposes Response to December 2013 Petition

- **January 19, 2017:** EPA proposes to deny petition to expand the Ozone Transport Region (OTR) to include 9 additional States
 - Upwind States (Illinois, Indiana, Kentucky, Michigan, North Carolina, Ohio, Tennessee, West Virginia and Virginia)
- OTR member states are required to adopt certain rules for emissions sources to address the interstate transport of ozone pollution

EPA Cites Other Interstate Transport Rules in Denial

- Petitioning States submitted analyses intended to demonstrate the 9 upwind States significantly contribute to violations of the 2008 ozone standard
 - (Connecticut, Delaware, Maryland, Massachusetts, New Hampshire, New York, Pennsylvania, Rhode Island and Vermont)
- EPA indicates that interstate ozone transport rules (including CSAPR) will address issue

Questions

