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# EPA Final Mercury & Air Toxics Standard: A Look Ahead

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## How Did We Get Here?

- 2005: Bush EPA
  - Delisted existing Coal- and Oil- EGUs from § 112 regulation
  - Set NSPS for new Coal- and Oil- EGUs
  - Clean Air Mercury Rule (CAMR): Established Mercury emissions ceiling, and cap-and-trade regime
- 2008: *New Jersey v. EPA* – *Vacated* CAMR, NSPS
  - “Necessary and Appropriate” finding in 2000 required EPA to make specific findings under § 112(c)(9) prior to delisting EGUs
  - NSPS not severable



## How Did We Get Here?

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- Bottom Line from *New Jersey v. EPA*:
  - No Emissions Trading for HAPS
  - MACT Standards required for Coal- and Oil- EGUs

# The Big Picture: Alphabet Soup

- MACT
- MATS
- HAPS
- EGUs
- NSPS
- CAIR
- CSAPR
- CCR
- Let's call the whole thing off.



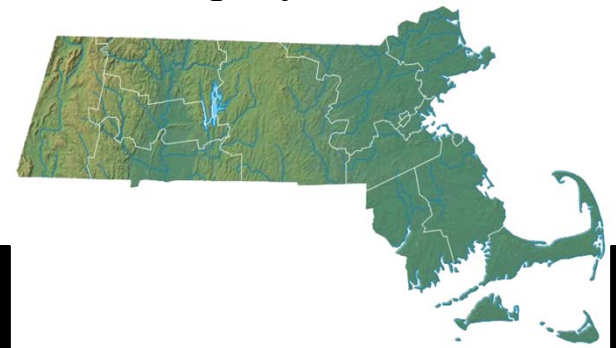
## The Big Picture: MATS

- MATS regulates Hazardous Air Pollutants (HAPS) with numeric emissions limits for:
  - Heavy Metals
    - Mercury, Arsenic, Chromium, Nickel, and Five Others
  - Non-Metallic Air Toxics
  - Acid Gases (Hydrochloric and Hydrofluoric Acid)
  - Dioxins and Furans
- Applies to Electric Generating Units (EGUs) with output >25 MW
  - Coal and Oil Fired
- Installation of Maximum Achievable Control Technology (MACT)
  - Defined as: Best performing 12% within industry subcategory
  - Stricter New Source Performance Standards (NSPS)
- Work Practice Standards for some EGU Categories
- Three year deadline (w/ available one year extension)



## What does MATS mean for Mass?

- Massachusetts already regulates Mercury emissions
  - 310 C.M.R. § 7.29
    - Standard is output-based or technology-based
    - Phase 1 (until 10/1/2012) - Best 15% of available technology or .0075 lb/GWh
    - Phase 2 (after 10/1/2012) Best 5% of available technology or .0025lb/GWh
    - Monitoring - CEMs with averaging on rolling 12-month basis
  
- MATS
  - Regulates eight other metals, non-metallic air toxics, acid gases and dioxin
  - Technology standard is MACT
  - Output standard varies depending on EGU subcategory
    - Between 0.01 and 0.04 lb/GWh
  - Monitoring - CEMs or Quarterly Testing



## Changes From Proposal to Final

- Numeric Emissions Limitation for non-mercury metals
  - Surrogate changed to Filterable PM from Total PM
- NSPS changed to more achievable standard from Best Performing Control Technology
- Work Practice Standards during start-up and shut-down of coal-fired EGUs
- Flexible monitoring – CEMS or Period Quarterly Testing
- Averaging Window changed to 90 days from 30 days
  - But, for Mercury 90-day averaging has to meet more stringent standard (1 lb/TBtu)
- Work Practice Standards for oil- EGUs that are only activated during peak demand

# Changes From Proposal to Final: EPA Responsive to Industry

## ■ Edison Electric Institute *Suggestions in comments to Proposed Rule*

Extensions beyond “hard stop” 3-year deadline



Extensions beyond 4-year deadline where commission certifies plant is necessary to ensure reliability



Standard for non-mercury metals: Surrogate changed to Filterable PM from Total PM



NSPS changed to more achievable standard from Best Performing Control Technology



Work Practice Standards during start-up and shut-down of coal-fired EGUs



More Flexible monitoring



Extend Averaging Window



Work Practice Standards for oil- EGUs that are only activated during peak demand



Recalculate proposed mercury emissions standards





## Time To Comply

- Presidential Memorandum, Dec. 16, 2011
  - Directs EPA to “*make full use of CAA’s authority to grant additional time to those facilities that need it.*”
  
- EPA Memorandum, Dec. 16, 2011
  - Bottom Line: Compliance period is 4 years, not 3, because EPA will freely grant one-year extensions
    - Authorized by CAA § 112(i)(3)
  
  - After 4 years, Administrative Orders (AOs) will be granted, but standard is *very* difficult

## Administrative Orders

- EPA Standard for granting AOs
  - EGU deactivation will affect reliability; *or*
  - Delays for installation of controls will affect reliability
- Procedure
  - Owner/Operator must provide:
    - All compliance plans
    - Written analysis of reliability
      - Standard: *“Failure to operate unit will cause reserves to fall below required system reserve margin”*
    - Written concurrence of analysis from regional planning authority
    - Copy of request sent to the Federal Energy Regulatory Commission (FERC) for analysis

## Costs: Competing Estimates

- EPA, *Regulatory Impact Analysis*
  - \$9.6 billion annualized cost of compliance (2007\$)
  - 3.1% average increase in retail electricity price (Low of 1.3% in California and high of 6.3% in Southwest Pool)
- NERA Economic Consulting, *Proposed CATR + MACT Study for American Coalition for Clean Coal Electricity*
  - \$17.8 billion annualized cost of compliance (2010\$)
  - 12% increase in average retail electricity price



## Costs: The Net Train Wreck

- Congressional Research Service, *EPA's Regulation of Coal-Fired Power: Is a "Train Wreck" Coming?*
- Cumulative impact of Cross State Air Pollution Rule (CSAPR); and MATS Proposed Rules; NAAQS for O<sub>3</sub>, SO<sub>2</sub>/NO<sub>x</sub>; PM/PM<sub>2.5</sub>; NSPS for GHGs; Cooling Water Intake; Clean Water Effluent and Coal Ash Rules
- Annual Cost per rule:
  - CSAPR - \$2.4 billion
  - Utility MACT - ~\$10 billion
  - NAAQS - \$1.5 billion+ (NOTE: O<sub>3</sub> NAAQ scuttled by President)
  - NSPS for GHGs - Unknown
  - Cooling Water Intake - \$319 million
  - Coal Ash - \$587 million - \$1.5 billion

## Impact on Generation

- Credit Suisse, *Growth from Subtraction: Impact of EPA Rules on Power Markets* (Study conducted before Proposed MATS Rule)
  - 50/60 GW Retired
    - 103 GW have no environmental controls
    - 58 GW lack scrubber units necessary to reduce Mercury emissions



## Electricity Reliability

- Congressional Research Service, *EPA's Utility MACT: Will the Lights Go Out?*
  - Conclusion: “*It is unlikely electric reliability will be harmed by rule.*”
  - 4.7 GW (1.3% of capacity) *Retired or Derated*
  - Some Key Figures
    - 55% of nation's electricity comes from sources not subject to regulation
    - 56% of coal-fired units have installed equipment that can be used to meet standard
    - 20 GW of coal-fired EGUs (~7% of capacity) will install scrubbers
    - 64 GW (~33% of capacity) will upgrade scrubbers
    - 102 GW will install fabric filters

## Electricity Reliability

- Congressional Research Service, *EPA's Regulation of Coal-Fired Power: Is a "Train Wreck Coming?"*
  - Rules will affect primarily coal-fired plants >40 years old
  - Industry studies (NERC, EEI, Credit Suisse) are unreliable because they assume far more cost-intensive controls than ultimately required
  - Promulgation or enactment of many rules may take years due to delays and judicial review
  - Many of the largest states in the country (CA, NJ, MA, NY) have rules substantially similar or stricter than those proposed
  - There is a large volume of excess electricity capacity due to construction of natural gas combined cycle plants

## Electricity Reliability

- Department of Energy, *Resource Adequacy Implications of Forthcoming EPA Air Quality Regulation*
  - Stress Test of CSAPR & MATS Proposed Rules
    - Assumes most cost-intensive controls (not actual MACT requirements)
      - Scrubbers *and*
      - Filters for all EGUs
    - Considers “tie in” cost and time
    - 29 GW *Retired*
    - Target Reserve Margins will be met in all regions



# Congressional Response

## ■ H.R. 2401, TRAIN Act

- Status: Passed House
- MATS and CSAPR are “*of no force and effect*”
- Convenes interagency panel to study cumulative economic impacts
- Delays promulgation of MATS until one year after panel report
- Delays compliance until five years after panel report
- Replacement rule must adopt “least burdensome regulatory alternative”



## Congressional Response

- Congressional Review Act, 5 U.S.C. § § 801-808
  - Vote of 30 senators puts “resolution of disapproval” on calendar
  - No filibuster. No amendments. 51 votes needed to pass.
  - “Resolution of disapproval” bars agency from reissuing same or substantially similar rule
  - Sen. Inhofe (R-OK) will introduce “resolution of disapproval” of MATS in 2012
  - Sen. Paul (R-KY) introduced “resolution of disapproval” of CSAPR in 2011
    - President Obama threatened veto
    - Resolution failed by 41-56 margin

## On The Other Hand

- Sierra Club Beyond Coal Campaign  
<http://beyondcoal.org/>
- Coal Free Massachusetts By 2020
- Goldman Sachs Downgrade of Coal in December 2011



## Questions?

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