



# **Clean Air Issues Facing States and Localities: Regulatory Update**

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# What I Will Cover

- ❑ Greenhouse Gases
  - ◆ Permitting
  - ◆ New Source Performance Standards
- ❑ National Ambient Air Quality Standards
- ❑ EPA's Transport Rule (CSAPR)
- ❑ Regional Haze
- ❑ Mobile Sources and Fuels
- ❑ Hazardous Air Pollutants (HAPs)
  - ◆ Industrial Boilers and CISWIs
  - ◆ Utilities

# Greenhouse Gas Regulation is Derived From the Clean Air Act

- ❑ *Massachusetts v. EPA* (April 2007)—Supreme Court ruled that GHGs are pollutants covered under the CAA
- ❑ Endangerment Finding (December 2009)—EPA found that GHGs endanger public health and welfare
- ❑ EPA required GHG emission reductions from cars and trucks (April 1, 2010)
- ❑ Once GHGs are “regulated pollutants,” major facilities above certain thresholds are required to obtain permits

# GHG Permitting

- ❑ GHG permitting requirements took effect January 2, 2011; apply only to the largest stationary sources of GHG emissions
- ❑ Most state and local agencies have authority to issue permits covering GHGs; for those that do not, EPA is issuing the GHG portion of permits under temporary federal authority
- ❑ EPA estimates that as of December 1, 2011, 18 construction permits containing GHG requirements had been issued and an additional 50 applications with GHG elements had been received
- ❑ Energy efficiency has been the standard control technology thus far
  - ◆ Should be expressed using numerical limits for carbon dioxide equivalent (CO<sub>2</sub>e)
  - ◆ Other technologies, such as carbon capture and storage (CCS), need to be considered and evaluated, but may be eliminated as infeasible

# GHG Permitting

- On March 8, 2012, EPA issue a proposed rule under Step 3 of the GHG Tailoring Rule; EPA committed to finalize this rulemaking by July 1, 2012
  - ◆ EPA is proposing to retain the current GHG permitting thresholds of 100,000 / 75,000 tons per year CO<sub>2</sub>e for Step 3, rather than lower it to 50,000 tons; covers only the largest sources of GHG emissions
  - ◆ EPA also proposed two streamlining approaches for GHG permitting
  - ◆ Clean Air Act Advisory Committee GHG Permit Streamlining Workgroup recently set up with representatives from EPA, state and local permitting authorities, tribes, environmental groups, and industry; will identify and evaluate potential streamlining approaches

# New Source Performance Standards for Power Plants

- ❑ On March 27, 2012, EPA proposed New Source Performance Standards (NSPS) for new intermediate- and base-load power plants (coal and natural gas) emitting greenhouse gases
- ❑ EPA proposed an output-based standard of 1,000 lbs CO<sub>2</sub> per megawatt-hour (MWhr), which can be met by natural gas combined cycle turbines or coal with carbon capture and sequestration (CCS)
- ❑ The agency also provided an alternative compliance option for coal-fired power plants
  - ◆ 1<sup>st</sup> 10 years: 1,800 lbs CO<sub>2</sub>/MWhr (IGCC or super-critical coal)
  - ◆ Next 20 years: 600 lbs CO<sub>2</sub>/MWhr (coal with CCS)

# New Source Performance Standards for Power Plants

- “Transitional units” are exempt
  - ◆ Coal-fired power plants with approved permits by the date of the proposal or
  - ◆ Coal-fired power plants participating in a DOE CCS funding program with expired permits that are being extended
  - ◆ and that commence construction within 12 months of the date of proposal
  - ◆ EPA has identified 15 proposed plants that are “transitional”
- Modifications or reconstructions are also exempt

# Emissions Standards for Existing Power Plants

- ❑ EPA has yet to propose standards for existing power plants under Section 111(d) of the CAA
- ❑ Options include, among others
  - ◆ Performance standard that reflects energy efficiency only
  - ◆ Allowing 1) fleet averaging, 2) averaging over the entire state, or 3) energy efficiency or renewable energy to count towards compliance
  - ◆ Equivalency for state or regional programs that achieve equal or greater GHG reductions (RGGI, CA)

# National Ambient Air Quality Standards: Implementation Milestones

(as of April 2012)

| Pollutant                             | NAAQS Promulgation    | Designations Effective | 110(a) SIPs Due<br>(3 yrs after NAAQS promulgation) | Attainment Demonstration Due | Attainment Date |
|---------------------------------------|-----------------------|------------------------|---|------------------------------|-----------------|
| PM <sub>2.5</sub><br>(2006)           | Oct 2006              | Dec 2009               | Oct 2009  | Dec 2012                     | Dec 2014/2019   |
| Pb                                    | Oct 2008              | Dec 2010/2011          | Oct 2011  | June 2012/2013               | Dec 2015/2016   |
| NO <sub>2</sub><br>(primary)          | Jan 2010              | Feb 2012               | Jan 2013  | none                         | none            |
| SO <sub>2</sub><br>(primary)          | June 2010             | TBD                    | June 2013   | TBD                          | TBD             |
| Ozone<br>(2008)                       | March 2008            | Mid 2012               | March 2011  | 2015                         | 2015-2032       |
| PM <sub>2.5</sub><br>(current review) | Intended<br>June 2013 | 2015                   | June 2016   | 2018                         | 2020/2025       |
| Ozone<br>(current review)             | 2014                  | 2016                   | 2017  | 2019                         | 2019-2036       |

# National Ambient Air Quality Standards

## □ Ozone

- ◆ EPA proposed to strengthen 2008 ozone NAAQS in January 2010; decided last fall not to finalize new standard but to wait for next review (proposal expected late 2013)
- ◆ States now working to implement 2008 ozone NAAQS (75 ppb)
- ◆ Designation of areas to be final by May 31, 2012
- ◆ States must submit SIPs (state strategies) to EPA for approval
- ◆ Deadlines by which states are required to meet standard range from 2015 to 2032

## □ Sulfur Dioxide

- ◆ EPA promulgated new standard in 2010; circulated draft implementation guidance in Sept 2011, which was controversial because it relied on modeling to supplement scant monitoring network
- ◆ EPA recently announced it would allow area designations and infrastructure SIPs to move forward based on monitoring alone and will work with states and other stakeholders on whether there is a reasonable way to use modeling to supplement monitoring for purposes of determining attainment

# EPA's Transport Rule (CSAPR)

- ❑ In May 2011, EPA issued the Cross-State Air Pollution Rule (CSAPR) to regulate air pollution transported from one state to another; affects 28 eastern states
- ❑ Requires 23 eastern states to reduce NO<sub>x</sub> and SO<sub>2</sub> (beginning 1/1/2012) to help attain the PM<sub>2.5</sub> NAAQS, and 25 states to reduce NO<sub>x</sub> during ozone season (beginning 5/1/2012) to address the 1997 ozone standard (84 ppb); some states to achieve additional SO<sub>2</sub> reductions beginning in 2014
- ❑ Defines what portion of upwind state's emissions "significantly contribute" ozone or PM<sub>2.5</sub> pollution to downwind nonattainment or maintenance areas
- ❑ EPA developed emission budgets for each state; allowances to be allocated to covered facilities
- ❑ Sources may achieve reductions via unlimited intrastate and limited interstate allowance trading
- ❑ EPA to finalize Federal Implementation Plan for each covered state; states can then adjust aspects of FIP
- ❑ States may develop their own SIPs to achieve reductions; may determine which types of sources to control and how to administer programs

# CSAPR – Litigation

- ❑ CSAPR challenged by 45 parties, including 15 states; stayed by the DC Circuit in Court in December 2011
- ❑ Six states among those who intervened in support of EPA
- ❑ CSAPR replaced Clean Air Interstate Rule (CAIR), which was struck down by the DC Circuit Court in 2008 but kept in place temporarily while EPA developed a new rule
- ❑ EPA to administer CAIR while CSAPR legal challenges are pending
- ❑ Briefing took place February-March, 2012
- ❑ Court heard oral argument on April 13

# CSAPR – Litigation (cont.)

## □ Plaintiffs' Arguments

- ◆ Emission budgets don't take into account each state's "significant contribution"
- ◆ Emission reductions imposed on upwind sources more stringent than necessary for downwind states to attain/maintain NAAQS
- ◆ EPA relied on flawed air quality modeling to determine upwind states to be covered by CSAPR
- ◆ Compliance schedule and methods for determining "significant contribution" and state emissions budgets – arbitrary and capricious

# CSAPR – Litigation (cont.)

- Respondents' and State Intervenors' Arguments on Behalf of EPA
  - ◆ Approach to “significant contribution” consistent with Clean Air Act
  - ◆ EPA has statutory authority to promulgate FIPs to implement CSAPR
  - ◆ EPA’s use of air quality modeling to establish state emissions budgets is rational and supported by record
  - ◆ Modeling reliably identified areas that would have attainment or maintenance problem in 2012 without CAIR
  - ◆ Rule imposes permissible and rational reductions in interstate emissions
  - ◆ Rule reasonably establishes 2012 and 2014 requirements
  - ◆ EPA provided adequate notice and opportunity to comment on key elements on rule

# Regional Haze

- ❑ In 1999, EPA published a regional haze rule establishing a visibility protection program for Class I federal areas – 156 national parks and wilderness areas
- ❑ States required to develop and implement SIPs to reduce pollution that impairs visibility
- ❑ SIPs were to include determinations of Best Available Retrofit Technology (BART) and long-term strategies to ensure reasonable progress toward achieving national regional haze goal
  - ◆ Specific focus on EGUs built between 1962 and 1977
  - ◆ Option of adopting emissions trading program or other alternative, as long as it provides greater reasonable progress than BART
- ❑ SIPs were due to EPA in 2007; many were incomplete or not submitted
- ❑ Now, nearly all have been submitted
- ❑ EPA recently agreed to a schedule, set forth in consent decree, to take action on 45 regional haze SIPs

# Mobile Sources and Fuels – Important Federal Initiatives

- EPA has completed its Tier 3 light-duty vehicle and fuels standards, but it's languishing at the White House
  - ◆ Key issue: Lowering gasoline sulfur levels to 10 ppm
  - ◆ Will yield overnight reductions in vehicle NO<sub>x</sub> emissions (260,000 tons) equivalent to removing 33 million cars and trucks from the roads in 2017
  - ◆ NACAA report, *Cleaner Cars, Cleaner Fuel, Cleaner Air: The Need for and Benefits of Tier 3 Vehicle and Fuel Regulations* (Oct. 2011) – Cost of reducing sulfur in gasoline to 10 ppm < 1 penny per gallon
- Implement GHG emission standards for light-duty and heavy-duty vehicles (promulgated 5/7/2010 and 9/15/2011, respectively)
- Promulgate additional tier of LDV GHG emission standards (proposed 1/24/2012)
- Propose second phase of heavy-duty GHG emission standards

# HAPs: Industrial Boiler and CISWI

- ❑ EPA published final rules for area and major source Industrial/Commercial/Institutional Boilers (Section 112) and Commercial and Industrial Solid Waste Incinerators (CISWI) [Section 129] on March 21, 2011
- ❑ At the same time, the agency announced it would “reconsider” the rules to address technical issues requiring additional public input
- ❑ EPA proposed reconsidered rules for Boilers and CISWI on December 23, 2011
- ❑ NACAA submitted comments to the docket on February 21, 2012
- ❑ EPA is expected to issue the final rules sometime this spring, although a firm date has not been announced

# HAPS: Industrial Boiler and CISWI

- What the boiler proposal does for major sources
  - ◆ Creates new subcategories for light- and heavy-industrial liquids to reflect design differences in boilers
  - ◆ Sets new emissions limits for PM that are different for each solid fuel subcategory (e.g., biomass, coal)
  - ◆ Sets new emissions limits for carbon monoxide that reflect variability in emissions
  - ◆ Allows alternative total selective metals emission limits to regulate metallic air toxics instead of using PM as a surrogate

# HAPs: Industrial Boiler and CISWI

- What the boiler proposal does for major sources (cont.)
  - ◆ Replaces numeric dioxin emissions limits with work practice standards
  - ◆ Removes continuous emissions monitoring requirements for particle pollution for biomass units and proposes carbon monoxide limits that are based on either stack testing or continuous monitoring
  - ◆ Revises emissions limits for units located outside the continental US, and
  - ◆ Allows units burning clean gases to qualify for work practice standards instead of numeric emissions limits

# HAPs: Industrial Boiler and CISWI

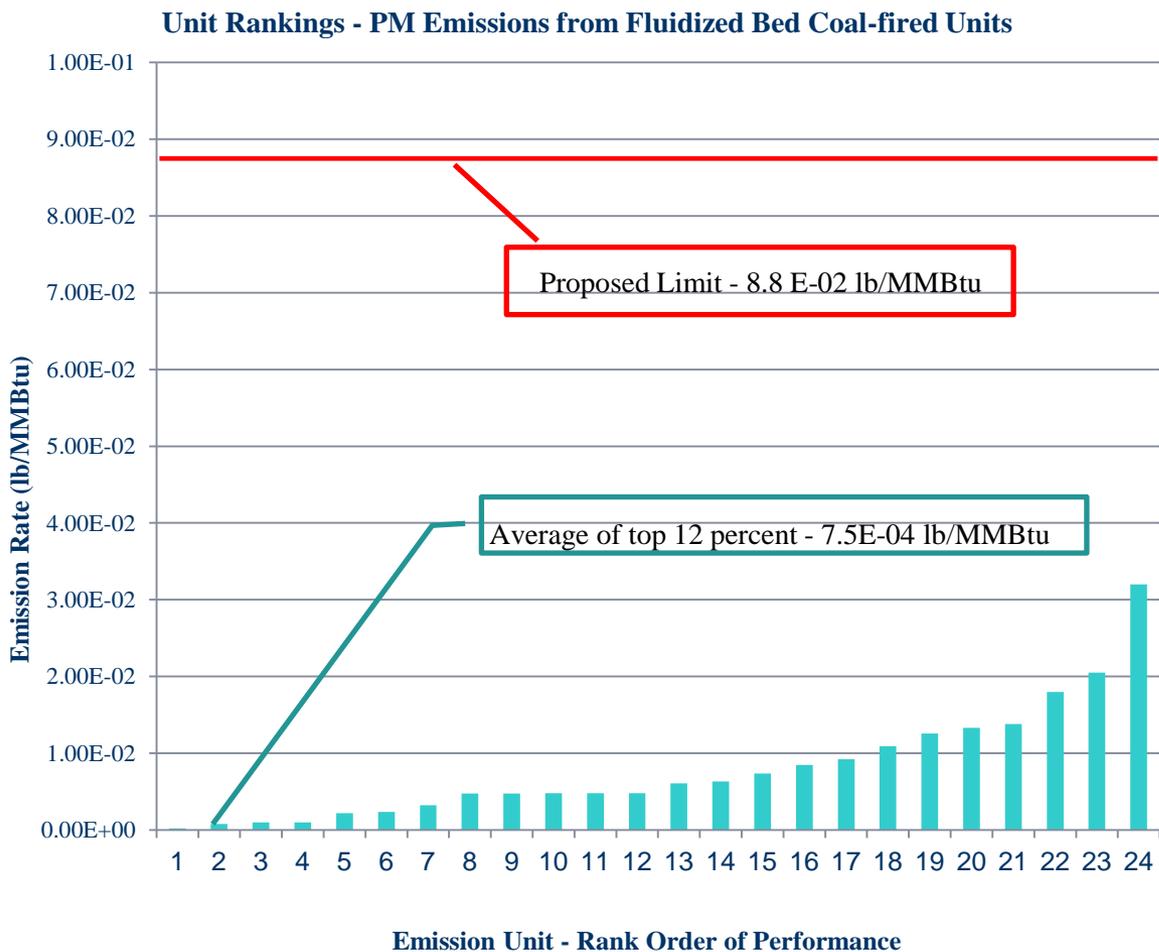
- What we liked about the proposal
  - ◆ Would lead to significant reductions in HAPs in a number of subcategories, especially mercury from solid fuel-fired subcategory
  - ◆ No risk-based exemptions (Health-Based Compliance Alternative); HBCAs were initially in the old rule the court vacated in 2007

# HAPs: Industrial Boiler and CISWI

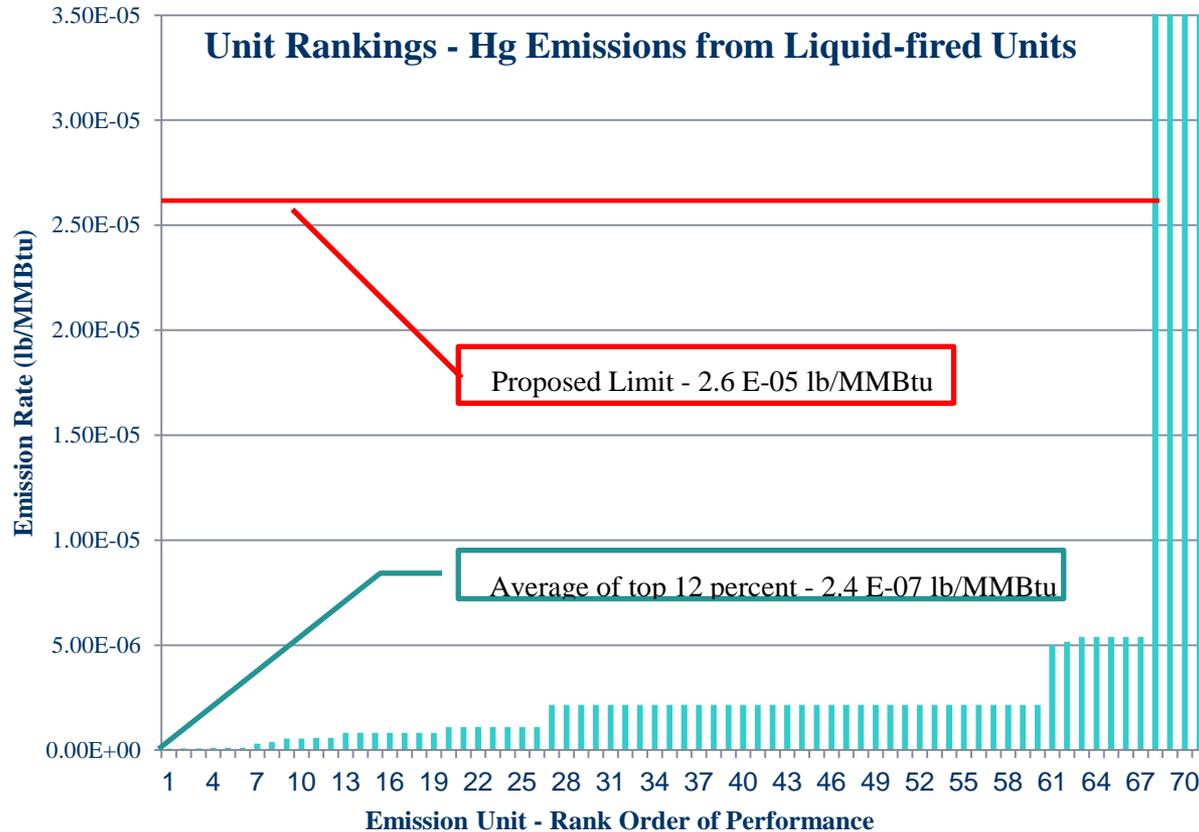
## □ Our primary concerns

- ◆ There are significant flaws in the MACT floor calculations (e.g., variability determinations)
  - ✓ EPA did not design the test program with subcategories in mind, so it did not require testing of a sufficient number of sources
  - ✓ In a majority of subcategories, the new source MACT floor (based on the best performing unit) is less stringent than the existing source MACT (based on the top 12%)
  - ✓ Methodology leads to emissions limitations that are currently met by almost all units in many source categories (inconsistent with MACT floor at 94<sup>th</sup> percentile), effectively exempting them from control requirements

# Many Sources Won't Have to Do Anything to Comply



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# HAPs: Industrial Boiler and CISWI

- Our concerns (cont.)
  - ◆ EPA included work-practice standards for CO for some subcategories and for dioxins/furans for all subcategories, but did not identify specific acceptable work practices

# HAPs: Mercury and Air Toxics Standards (MATS)

- ❑ EPA announced proposed utility MACT to address emissions of hazardous air pollutants (HAPs) from electric utilities under Section 112 on March 16, 2011
- ❑ EPA announced final utility MACT [Mercury and Air Toxics Standards (MATS)] and NSPS for fossil fuel-fired EGUs on December 21, 2012

# HAPs: Mercury and Air Toxics Rule (MATS)

- ❑ Will reduce emissions of heavy metals (including Hg, arsenic, chromium, nickel), acid gases (including HCl and HF), particulate matter, SO<sub>2</sub> and NO<sub>x</sub>
- ❑ Among the expected reductions are mercury (90%), acid gases (88%), and SO<sub>2</sub> (41%)
- ❑ Will prevent as many as 11,000 premature deaths, 4,700 heart attacks and 130,000 asthma attacks annually
- ❑ Benefits (\$37-90 billion annually) FAR outweigh costs (\$9.6 billion annually)
- ❑ Will affect 1,400 coal- and oil-fired units at 600 power plants
- ❑ 2 subcategories of coal-fired plants, 4 subcategories of oil-fired plants and 1 subcategory for units combusting gasified coal or solid oil

# HAPs: Mercury and Air Toxics Rule (MATS)

- ❑ Standards include emission-control requirements based on proven and in-use technologies and processes
- ❑ EPA expects reliability will not be a problem
- ❑ Clean Air Act provides three years for compliance, with one additional year that permitting authorities can allow for technology installation
- ❑ Additional compliance time possible in cases in which reliability is a critical concern (to be addressed in enforcement policy document)

# HAPs: Mercury and Air Toxics Rule (Utility MACT)

## □ Concerns

- ◆ While most of the standards are numeric emission limits, the standard for organic air toxics (e.g., dioxin/furans) is a work-practice standard (annual performance test). Work-practice requirements must be demonstrated to achieve emissions performance “consistent with” MACT floor. Will this be the case for the organic air toxics?
- ◆ Permitting authorities need guidance related to the provisions allowing for a 4<sup>th</sup> compliance year for sources to install controls and possible additional time for reliability-critical units

# For Further Information:

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