

# Recent Developments in Clean Air Regulation

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CHMM Environmental Summit

April 26, 2012



# Outline

- Actions related to Ambient Air Standards
- Update on Hazardous Air Pollutant Rules
- Actions specific to power generation



# National Ambient Air quality Standards



# National Ambient Air Quality Standards (NAAQS)

Ambient air = atmosphere around us  
Outdoor; beyond fence line

- Particulate matter\* (later, fine PM)
- Ozone\*
- Sulfur dioxide
- Carbon monoxide
- Nitrogen dioxide
- Lead



# Implications Of NAAQS Non-attainment

- Federal sanctions, including loss of highway funding
- Harder to permit new, modified, or reconstructed facilities
  - Tighter controls
  - Offsets required
- Progressively so in 1990 CAAA



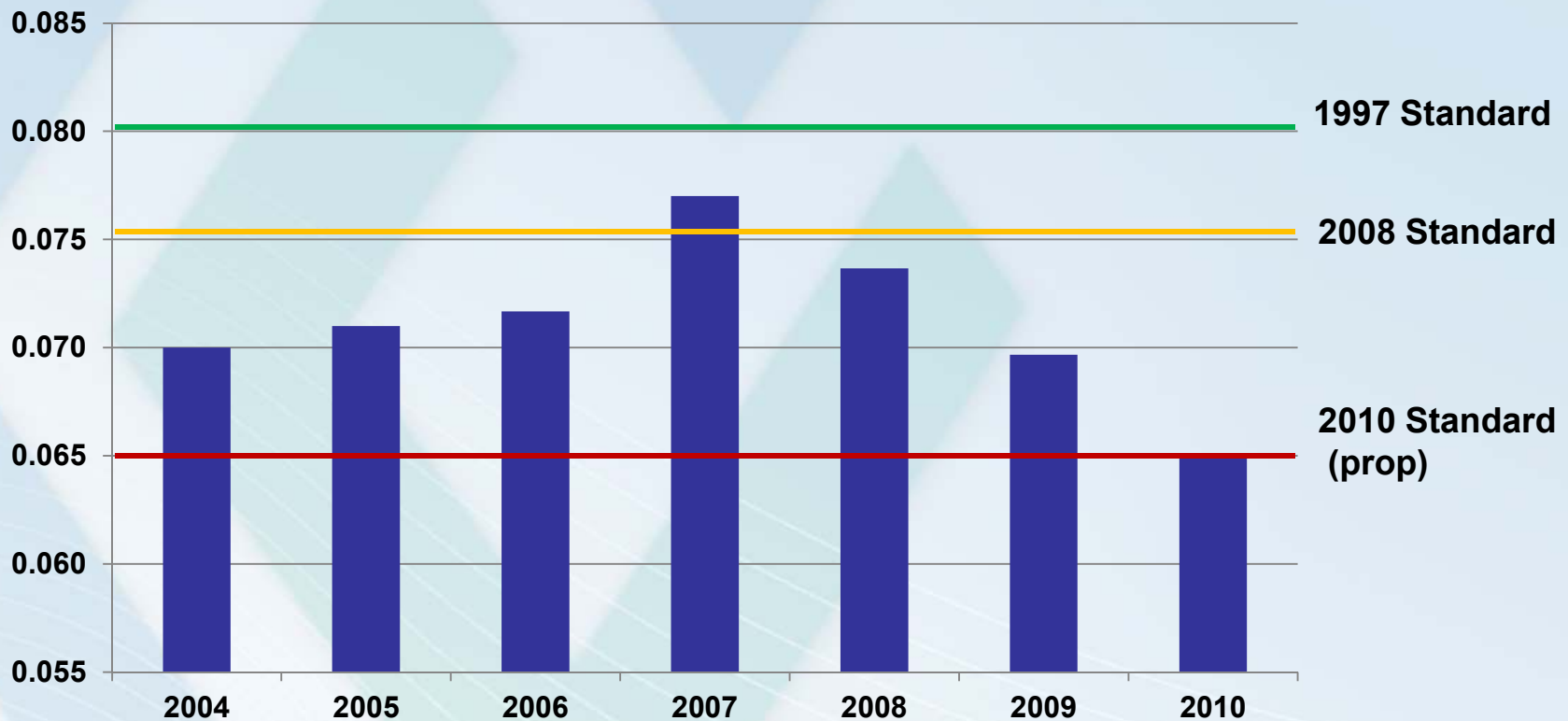
# Ozone NAAQS History

- Formerly 120 ppb, based on 1-hour average
- 1997 – Lowered to 80 ppb based on 8-hour average
- 2008 – Lowered to 75 ppb, 8-hour avg.
- 2010 - Reconsidered; proposed lowering to 60 - 70 ppb, 8-hour avg.



# Ozone NAAQS - Springfield

## 3-Year Average of Fourth High Value



# Ozone NAAQS Reconsideration

- Push-back from states, cities, business, etc.
  - Questions of attainability and impacts
  - Joplin example
- OMB delayed implementation
- Administration opted to wait until 2013
- EPA proceeding with 2008 standard
- Litigation pending



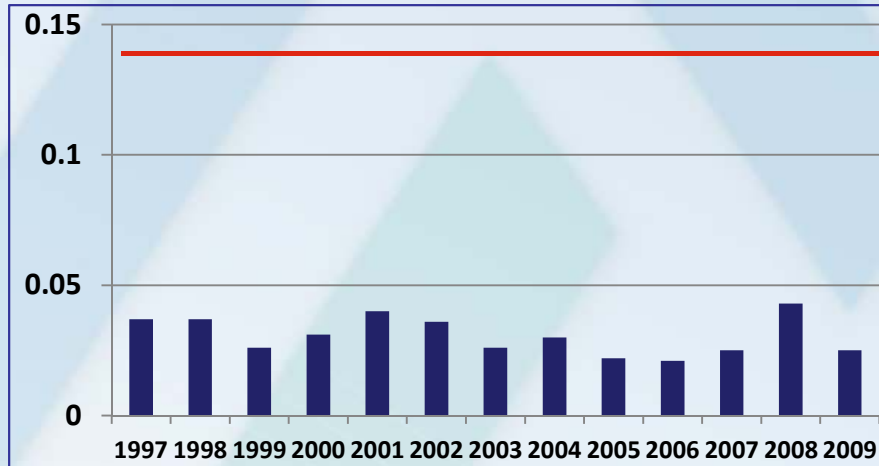


# Sulfur Dioxide

- Former primary standard:
  - 140 ppb, 24-hour average
  - 30 ppb, annual average
- New standard January 2010:
  - 75 ppb, 1-hour average
  - Statistically based, 99<sup>th</sup> %ile, 3-year average

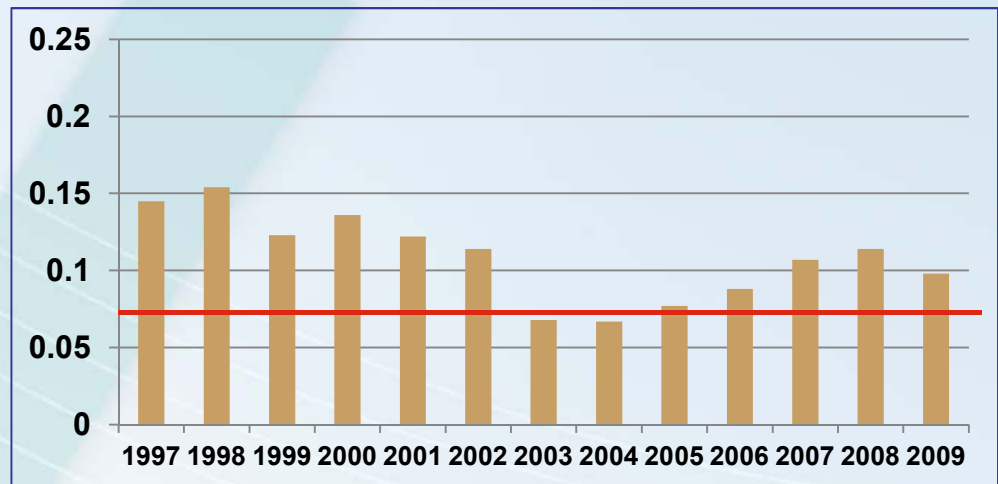


# SO<sub>2</sub> NAAQS -Springfield



24-hour SO<sub>2</sub> averages since 1997 vs. the former NAAQS limit

Maximum 1-hour SO<sub>2</sub> levels since 1997 vs. the new NAAQS limit



# Implications

- State has narrowly defined nonattainment area near the monitoring sites
- Statewide modeling effort ongoing
  - EPA showing signs of backing away from this aspect but local sources (within 50 km) still affected
- Linkage to other power plant rules, below

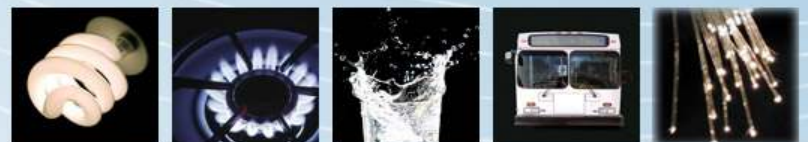


# Nitrogen Dioxide

- Former standard: 53 ppb, annual average
- New standard January 2010:
  - 100 ppb, 1-hour average
  - Statistically based; 98<sup>th</sup> %ile, 3-year average
- New monitors required in urban areas, near major roadways
- Implementation rule 2/17/12 :
  - Entire nation Non-classifiable



# Hazardous Air Pollutants (HAPs)



# HAPS Regulation

- Non-criteria Pollutants
- Typically emitted in relatively small quantities
- 1990 Amendments: Set standards for 189 more or *states* will have to do it
- Maximum Achievable Control Technology (MACT) for new *and* existing sources



# New Developments

- Reciprocating Internal Combustion Engines (RICE) – *Stationary Industrial*
- Industrial, Commercial, and Institutional Boilers
- Commercial Industrial Solid Waste Incinerators



# RICE MACT – 40 CFR 63; ZZZZ

- Existing source revisions promulgated March 3, 2010 for:
  - <500 bhp at major source facilities
  - Any size at area source facilities
  - \*\* Compliance date 5/13/2013 \*\*
- Emission limits; generally require oxidative catalyst
- O&M work practice standards





# Emergency Unit Provision

- Broad exemption for residential, commercial, institutional emergency units
- Limited exemption for industrial emergency units
- “Emergency” does not (at present) include electrical peak shaving



# Emergency Unit Usage

- Internal system support/On-site generation
- On-site mechanical duty (pumps, e.g.)
- Operating limitations
  - Actual emergency duty - unrestricted
  - Maintenance & testing – 100 hours/yr
  - Non-emergency service - 50 hours/yr
  - Grid support – 15 hours/yr



# Industrial Boiler MACT II

- 3/21/11 - Final rules for major and area sources,
- 5/18/2011 - Notice staying (delaying) effective date
- 12/23/2011- EPA proposed reconsidered standards
  - Closely tied to CISWI and NHSM rules, same date
- 1/09/2012 - Court vacated EPA's administrative stay of the 3/21/11 rule
- 2/07/2012 and 3/13/2012 - EPA issues No Action Assurance letters for major and area sources, respectively
- 3/21/12 – First compliance deadline
- 7/??/2012 - Final reconsidered rule expected



# Power Plant Regulatory Agenda



# Cross-State Air Pollution Rule (CSAPR)

- Replacement for vacated Clean Air Interstate Rule (CAIR)
- Affects 28 states in the eastern U.S.
- Cap-and-trade program for SO<sub>2</sub> and NO<sub>x</sub> emissions
- About 15% more stringent than CAIR for NO<sub>x</sub>
- Trading restricted between states and regions



# Mercury and Air Toxics Standards (MATS)

- Formerly known as Utility Boiler MACT
- Similar in principal to Industrial Boiler MACT
- Replaces vacated Clean Air Mercury Rule (CAMR)
- More stringent than CAMR: Non-mercury metals, acid gases



# Implementation Status

- CSAPR – 1/1/2012 compliance date stayed pending challenge; expedited hearing schedule
- MATS – Compliance by 4/16/2015; court challenge may or may not delay
- SO<sub>2</sub> NAAQS – Final but challenge underway; states have submitted recommended Nonattainment areas



# Greenhouse Gases

- Tailpipe emissions rule for 2012 and later model year autos
- BACT rule effective 1/2/2011; applies only to largest major sources (Tailoring Rule)
- Argued before D.C. Circuit Court of Appeals at end of February, 2012
- NSPS for new power plants proposed 4/13/2012



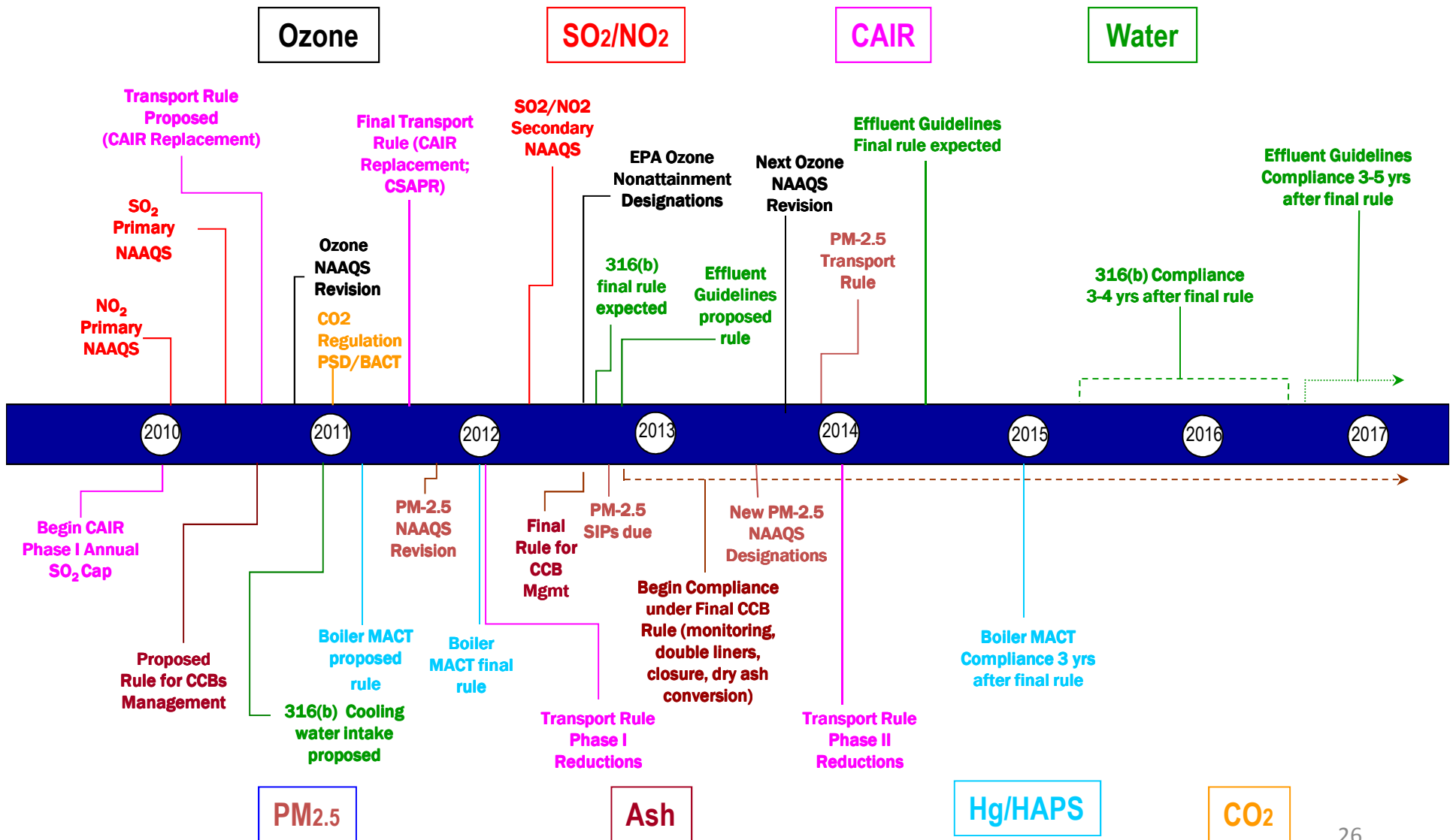


# Non-Air Issues

- Coal Combustion Residuals (CCR)
  - Is coal ash hazardous or non-hazardous under RCRA?
- Cooling water intake structures
  - Entrapment and entrainment of aquatic life
- Effluent Limitations Guidelines
  - CWA categorical limits last revised in 1982



# Possible Timeline for Environmental Regulatory Requirements for the Utility Industry



# Impacts

- Uncertainty – Utility planning stalled
- Control equipment – FGD for SO<sub>2</sub>, SCR for NO<sub>x</sub>, baghouse or ESP upgrades for particulates; Activated carbon for Hg
- Few new SCRs in Missouri – already added under CAIR
- Up to 38 new Hg control systems
- Particulate upgrades widespread as well



# Cost Impacts

- Uncertain; need final wording on all rules (water and waste)
- CU planning and impacts *greatly* assisted by new JTEC (Southwest) Unit 2
- One large MO utility already announced expenditures of \$1 billion for air controls
- Another estimates rate impacts of 15-20% but deferred to 2017.
- One nearby utility announced a plant closure but not in Missouri; others under consideration



# Fuel Impacts

- Some will doubtless choose to switch from coal to natural gas
- All new capacity will be natural gas if GHG NSPS finalized as proposed
- Upward pressure on gas prices
- Potential problems regarding Fuel Use Act of 1978



# Questions?

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