United States Environmental Protection Agency

Air Enforcement Priorities and Developments

Presentation

May 9, 2012

Roadmap for Today

- Stationary Sources
  - NSR
    - Progress to date
  - Air Toxics
    - Significant new results
    - Opportunities for more state/federal cooperation
- Mobile Sources
  - Marine Fuels and Engines
    - Why it matters to states
- Your Thoughts, Comments and Questions

National Priorities -- Air

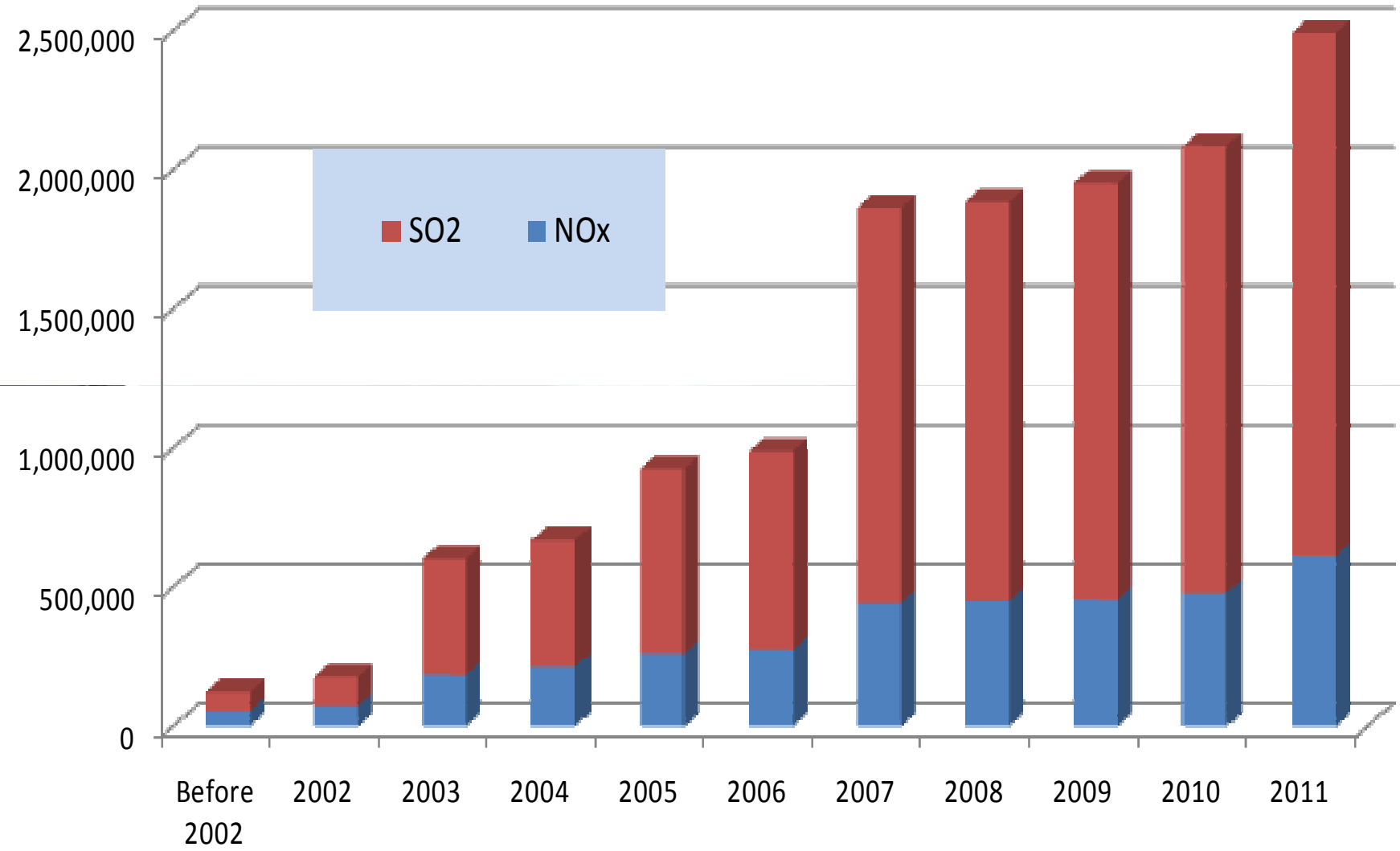
- Stationary Sources -- EPA's Priorities
  - NSR
    - Coal-fired Power Plants
    - Cement Kilns
    - Acid Manufacturers
    - Glass Furnaces
  - Air Toxics
    - LDAR
    - Flares
    - Excess Emissions

New Source Review (NSR)

Coal-Fired Utilities: Results

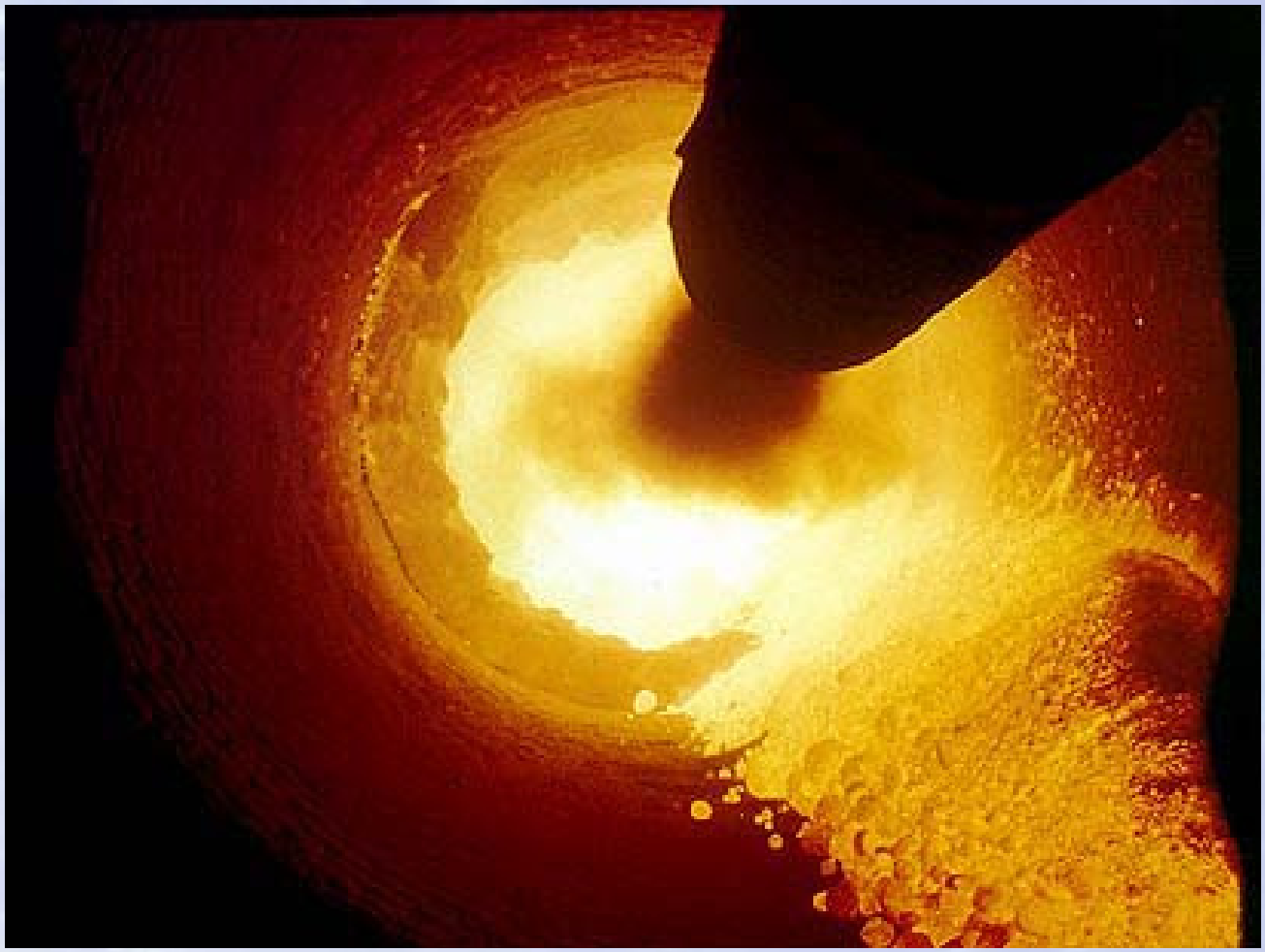
- 22 Settlements
  - > 2.49 million tpy of reductions of SO_2 and NO_x (upon full implementation)
  - > $16.6 billion – injunctive relief
  - > $80 million – civil penalties
  - > $618 million –mitigation projects

Coal-Fired Utility Settlement
Cumulative Emission Reductions*

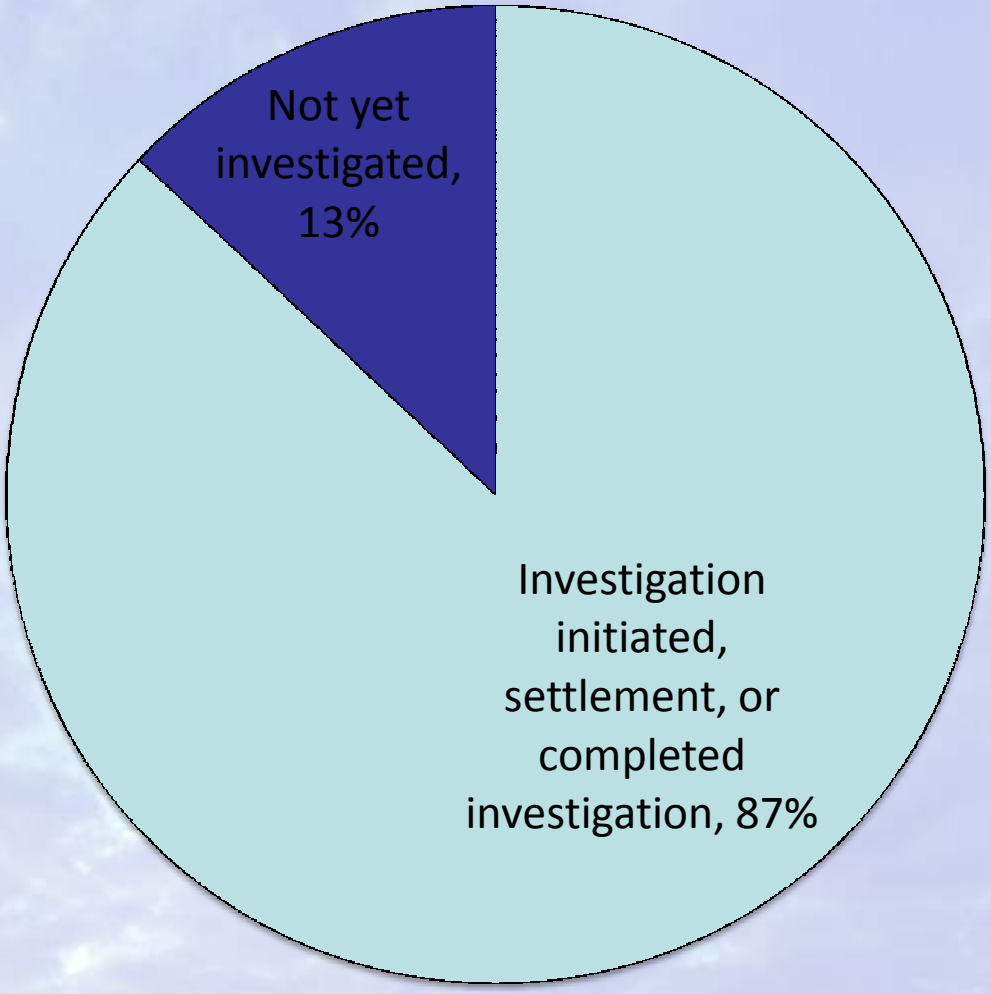


* Reductions secured in Consent Decrees - reductions may occur during future years

Cement Manufacturing Sector



Cement Manufacturing Sector Investigations



Essroc Settlement

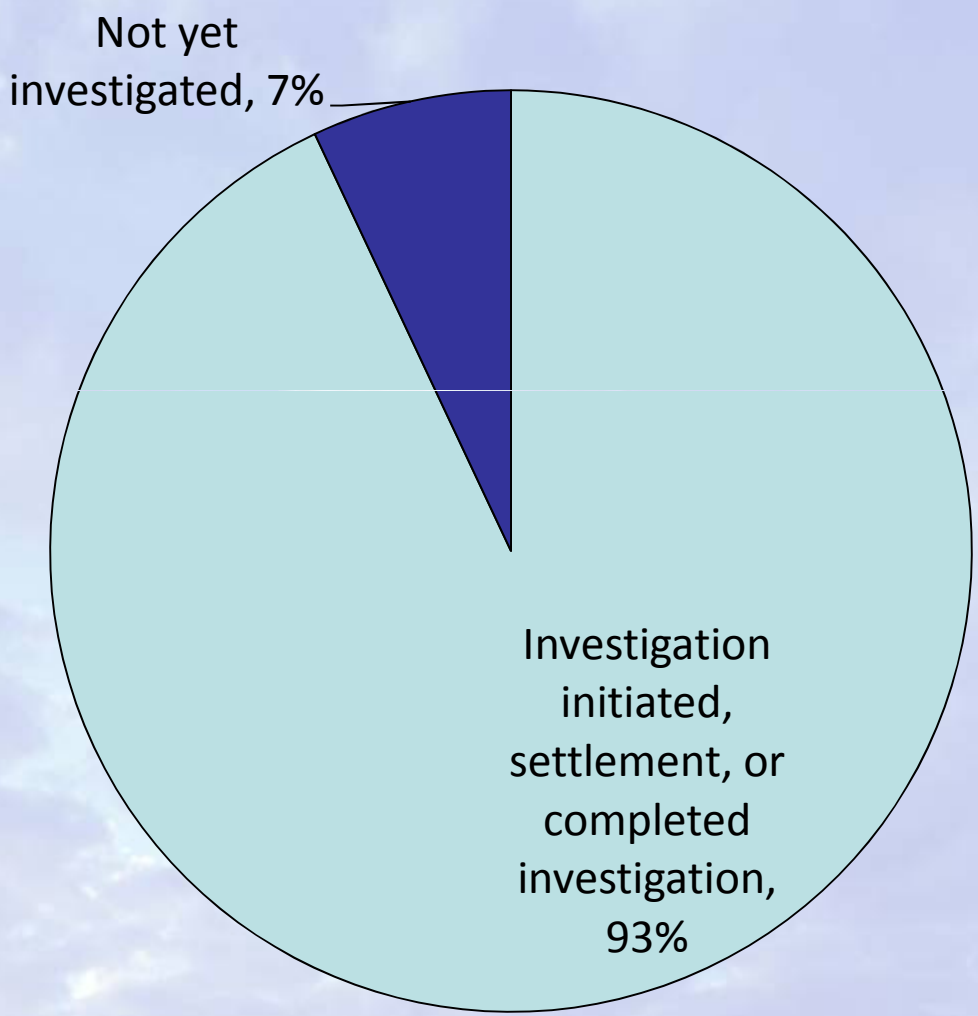
- Settled December 29, 2011
- Covers six plants (PA, WV, IN, and PR)
- > 7,000 tons of pollutant reductions (NOx and SO2)
- $33 million in injunctive relief
  - SCR on two long wet kilns (first in the U.S.)[1]
  - Dry scrubbers/lime injection on seven kilns
  - SNCR on five kilns
  - Permanent retirement of Bessemer plant
- $1.7 million penalty
- $745,000 mitigation (off-road vehicle engine replacements)

[1] SCR installation is conditional on a feasibility demonstration with SNCR alternative

Acid Manufacturing Sector

lvk34
E1

Acid Manufacturing Sector - Investigations



Slide 11

lvk34 Update with current status.
lkabler, 9/14/2011

E1 EPA, 9/21/2011

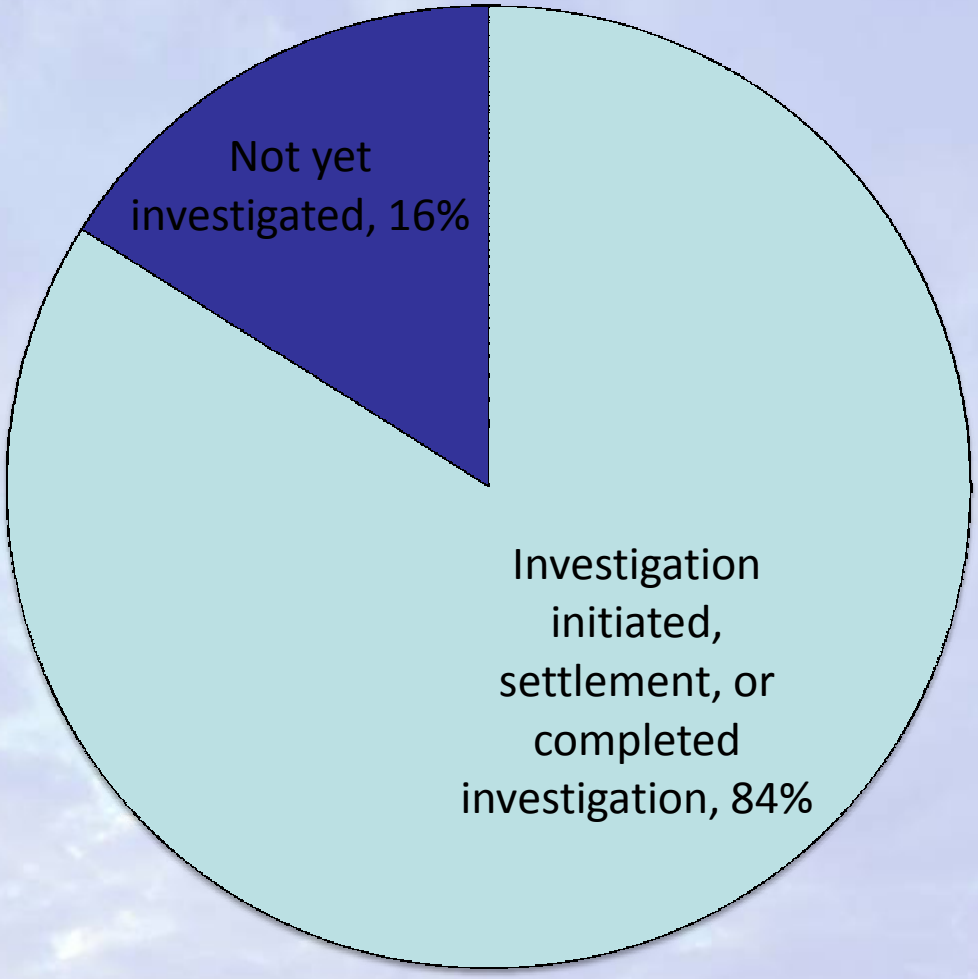
Terra Industries

- Settled April 19, 2011
- One of the nation's largest producers of nitric acid and nitrogen fertilizers
- Nine plants located in Iowa, Mississippi, and Oklahoma
- Estimated $17 million to install new SCRs or upgrade existing SCRs
- Approximately 1,200 tons per year of NOx reduced
- $625,000 in civil penalties

Glass Manufacturing Sector

lvk35

Glass Manufacturing Sector - Investigations



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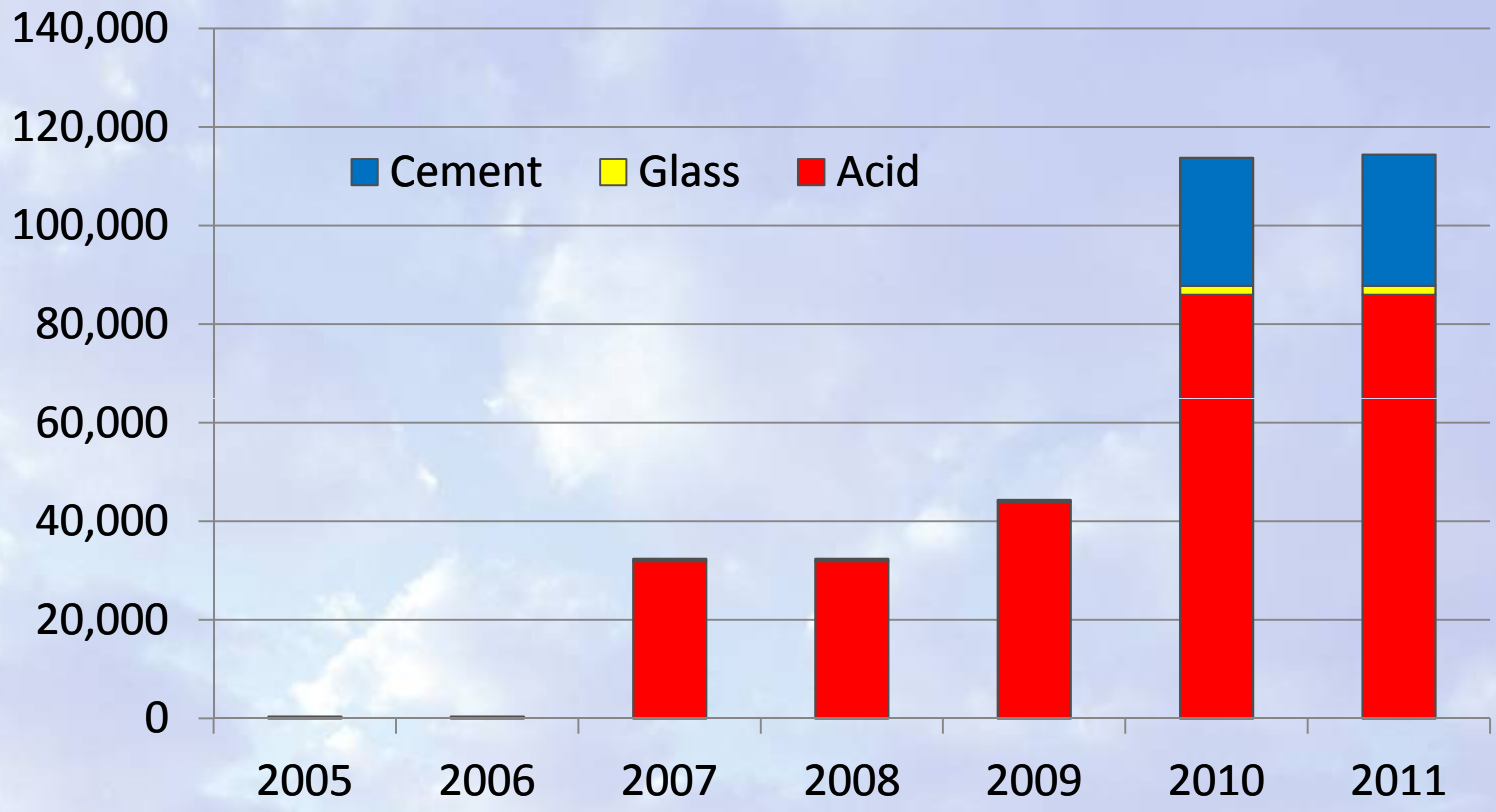
lvk35 Update.
lkabler, 9/14/2011

SO2 Emission Reductions* from NSR Sector Settlements



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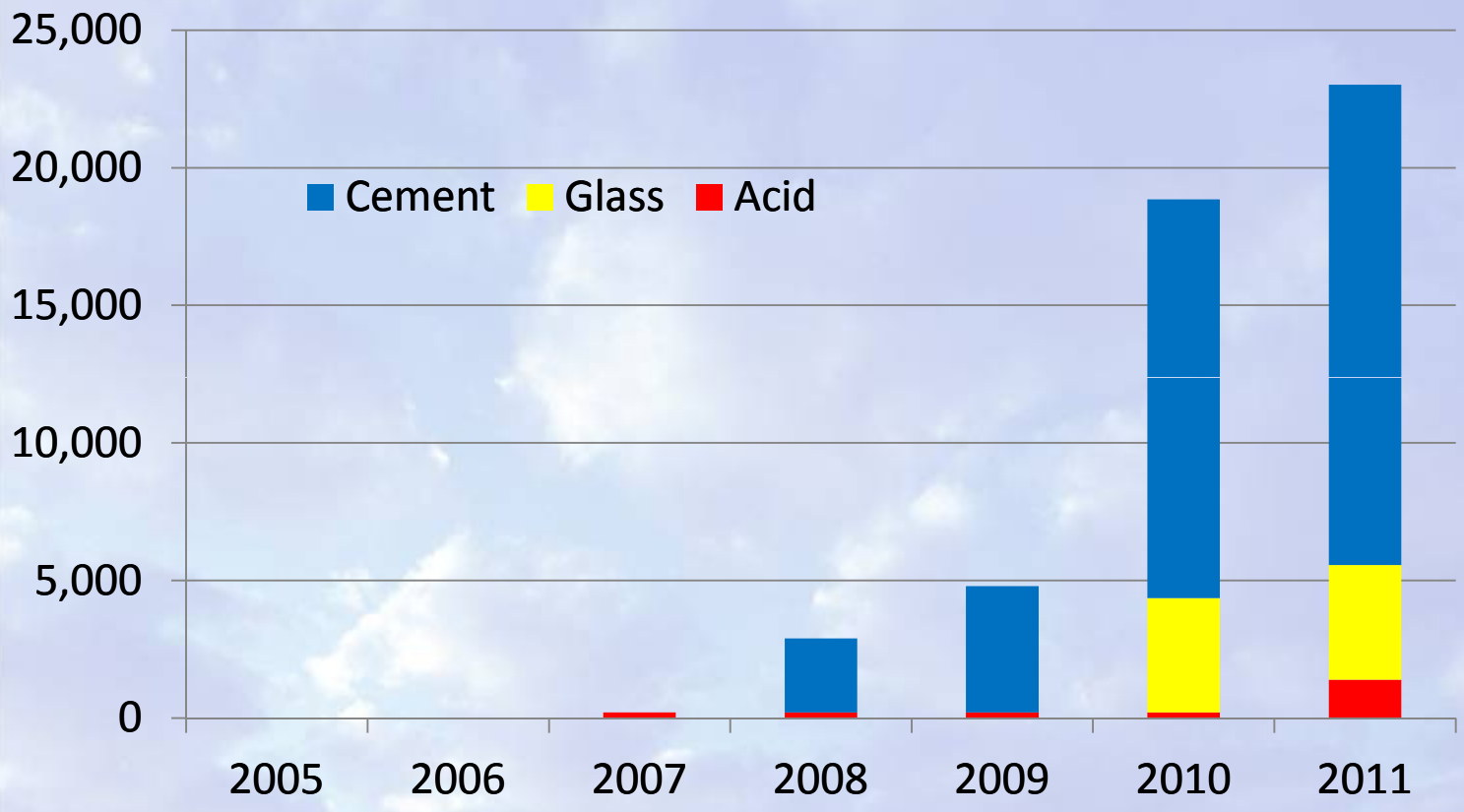
NO_x Emission Reductions* from NSR Sector Settlements



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Air Toxics

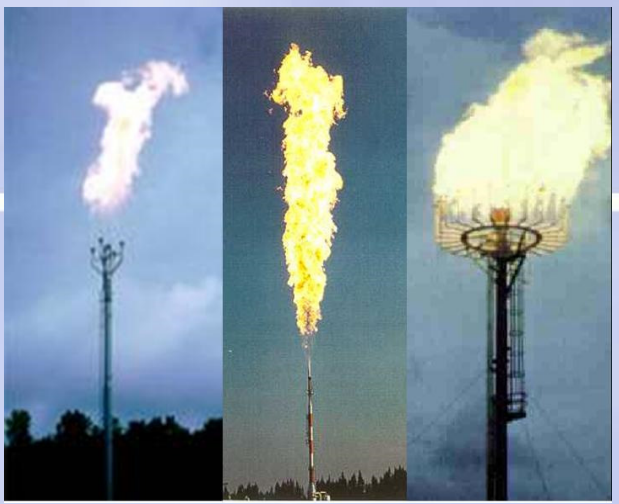
Three Air Toxics Focus Areas for 2011-2013

- Flares: Over steaming and combustion of gases with low Btu continue to be a problem; potential remains for very large emission reductions
- LDAR: EPA continues to find widespread noncompliance and significant emission reductions, so it will continue to focus on compliance evaluations utilizing Method 21
- Excess Emissions: EPA monitoring efforts have shown facilities emitting more HAPs than reported; excesses often due to abusing SSM provisions, poor operation and maintenance or **use of inaccurate emission factors**.

Air Toxics Initiative for 2011-2013

- Within the three focus areas (Flares, LDAR, and Excess Emissions):
  - emphasis will be on facilities suspected of adversely affecting communities;
  - greater use of fence-line monitoring technologies (i.e., UV-DOAS, PIDs, and FLIR cameras) to target and prioritize facilities and processes;
  - Efforts to evaluate "hidden or unsuspected sources of HAPS.

Why Focus on Flares?



- Two major problems:
  - Combustion of gases with low Btu content, and/or
  - Over-steaming
- Potentially Causing:
  - Incomplete combustion
  - Significant HAP emissions

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Success on the Flaring Front -- Marathon Petroleum and Catlettsburg Refining Settlement

- Consent Decree lodged April 5, 2012.
- Marathon has agreed to implement state-of-the-art controls on its flares across the country.
- Marathon will also cap the amount of waste gas going to flares.
- Marathon will spend approximately $50 million on flare efficiency controls.
- Expected reductions of 5,400 tons of pollution per year.

Next Gen
Expanding the Tool Box in the Battle Against Excess Emissions

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Enhancing the Routine Inspection – Photo Ionization Detectors and FlIR Cameras

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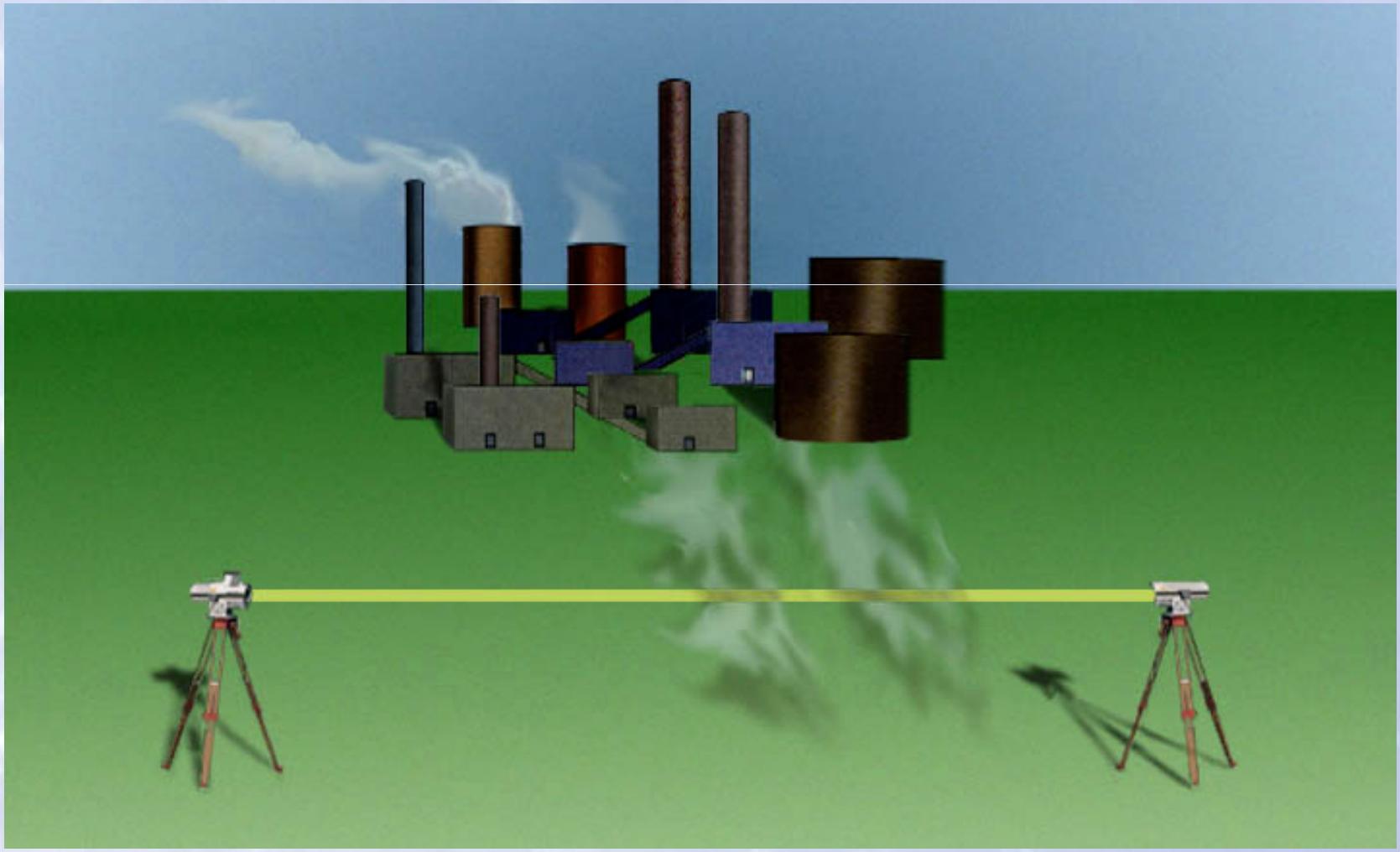
FLIR IR Cameras

- Enables inspectors, citizens, and judges to see the pollution
- Advantages for finding leaks in difficult to monitor sources or unexpected areas.

Ultraviolet Differential Absorption Spectroscopy (UV DOAS)



Benefits of Emissions Detection

- Existing databases for fugitive emissions, , e.g., NEI, TRI, are based on self-reported estimates and can significantly underestimate actual emissions.
- Technologies exists today that can detect, identify, and quantify releases of air toxics from stack and fugitive sources.
- When equipped with sophisticated gas detection devices, EPA inspectors can identify strong sources of VOCs and HAPs for detailed investigation, such as….
  - Tonowanda Coke benzene investigation (UV DOAS fence line measurements leading to DIAL sec. 114 test order, May 2010) which proved TCC is a major source of HAPs and is subject to MACT
  - R5 investigation of benzene emissions using PIDs indicated NESHAPs violations associated with vacuum truck emissions

Equipment and Training

- FLIR cameras and FLIR-certified inspectors:
  - NEIC, AED, Regions 1, 2, 3, 4, 5, 6, 7, 8
- Photo-ionization Detectors and AED-trained inspectors:
  - Regions 1 through 10
- UV DOAS (AED), Mobile Cavity Ring-Down Spectrometer (NEIC), DIAL (NPL)

What's Planned in the Near Term

- Storage tanks --Tanks can be a significant unreported/unknown source of VOCs and HAPs. We are developing training for inspectors to investigate tank emissions.
- Getting equipment into the field (PIDs, FLIR, UV DOAS).
- Field assistance and hands-on training.
- Looking for Multi-Region and state/federal collaboration opportunities.

Opportunities for Collaboration in the Area of Mitigation

Mitigation

"Here, the USA is a plaintiff and is seeking to protect the public interest; the government's role makes this case more analogous to *Porter* and *Mitchell* than *Meghrig.* And thus, the Court's equitable powers are even broader and more flexible than if only private parties were seeking relief."

United States v. Cinergy, 582 F. Supp. 2d 1055, 1060 (N.D. IN 2008)

Mitigation

"Applying this rule, this Court determines that it has the authority to order Defendants to take appropriate actions that remedy, mitigate and offset harms to the public and the environment caused by the Defendants' proven violations of the CAA."

582 F.Supp. 2d at 1060.

Most Popular Mitigation Projects

- Wood Stove Change-outs (multiple)
- Clean Diesel Retrofits (buses, trains, trucks) (multiple)
- Hybrid/Electric Fleet Conversion (including electric charging stations) (multiple)
- Forest Service/National Park Service Land Restoration/Donation (multiple)

Inside the Fenceline Projects

- Installation of wet ESP (EKPC)
- Advanced Mercury controls (Illinois Power, WEPCO)
- Mercury monitor R&D (PSEG)
- Reduction of PM and fugitive dust from facilities (Mirant)
- H2SO4 reduction program (SIGECO)
- Combustion optimization NOx reduction program (TECO)
- Control of sludge handling system (Marathon)
- Upgrading catalyst on a non-violating process line (Mosaic)

Renewable Energy Projects

- Solar Panel Installation on Schools/Public Buildings (multiple)
- Third party wind turbines projects (Minnkota)
- Hydro-station upgrade (Duke)

Energy Efficiency Projects

- Residential and Commercial Electric to Natural Gas Conversion (NIPSCO)
- General energy efficiency services to member municipalities (AMP and TVA)
- General energy efficiency projects in schools/public building (Illinois Power)

Greenhouse Gas Reduction Projects

- Pilot CCS project (KU)
- Coal Bed Methane Project (Hoosier)
- Methane gas recovery at landfill (multiple)
- 15% CO2 reduction from 1990 baseline (PSEG)

Mobile Source Projects

- Gas Can Replacements (Pending)
- Wood Stove Replacements (Powertrain)
- Idle Reduction Technology applied to Locomotives (Pending)
- Lawnmower Replacement (replace gas lawnmower with electric) (Pep Boys)
- Diesel Retrofits (Heavy Duty Diesel Engine (HDDE) cases)
- CNG Engine Subsidy (HDDE cases)
- LED Lighting (MTD)

Other Projects

- Air Chemistry Study in Tampa Estuary (TECO)
- Retire Acid Rain Allowances (Alabama Power)
- Truck electrification stations (Westar)

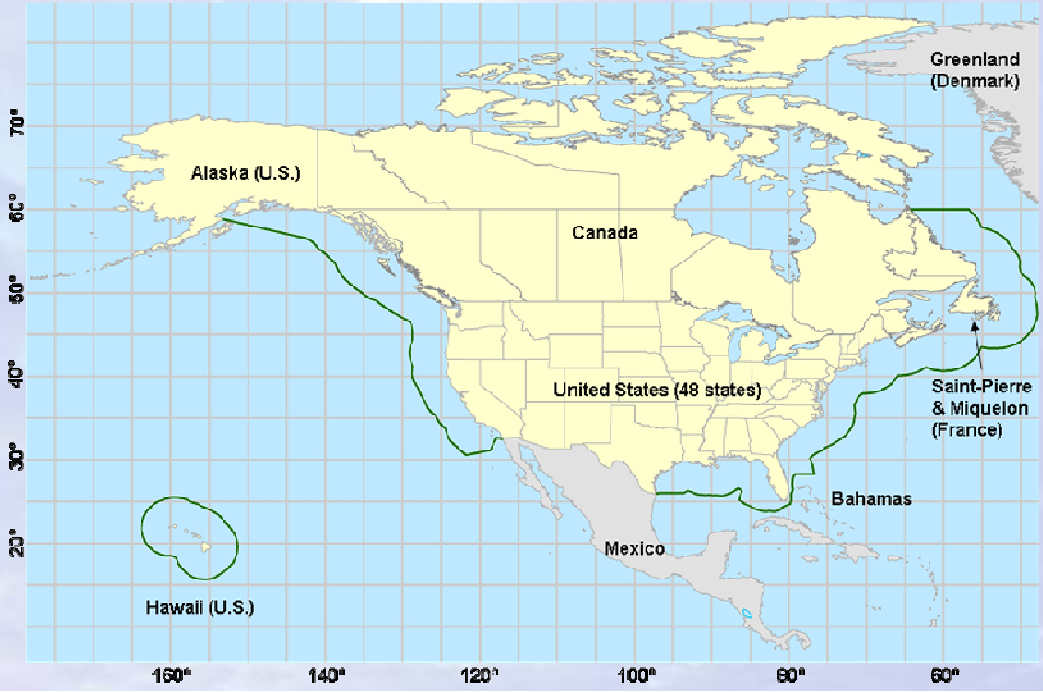
The Marine Diesel Program Matters to States

Summary

- **PROBLEM:** Marine air pollution (NOx, SOx, PM)
- **SOLUTION:** Enforcement of the marine regulations based on the Clean Air Act and MARPOL.
- **LAWS/REGS:** Regulations phase in more stringent emission & fuel requirements on domestic and foreign marine engines
- **ENFORCEMENT:**
  - USCG will perform onboard engine and fuel inspections (EPA or USCG may request EPA attendance)
  - EPA will perform onshore fuel inspections

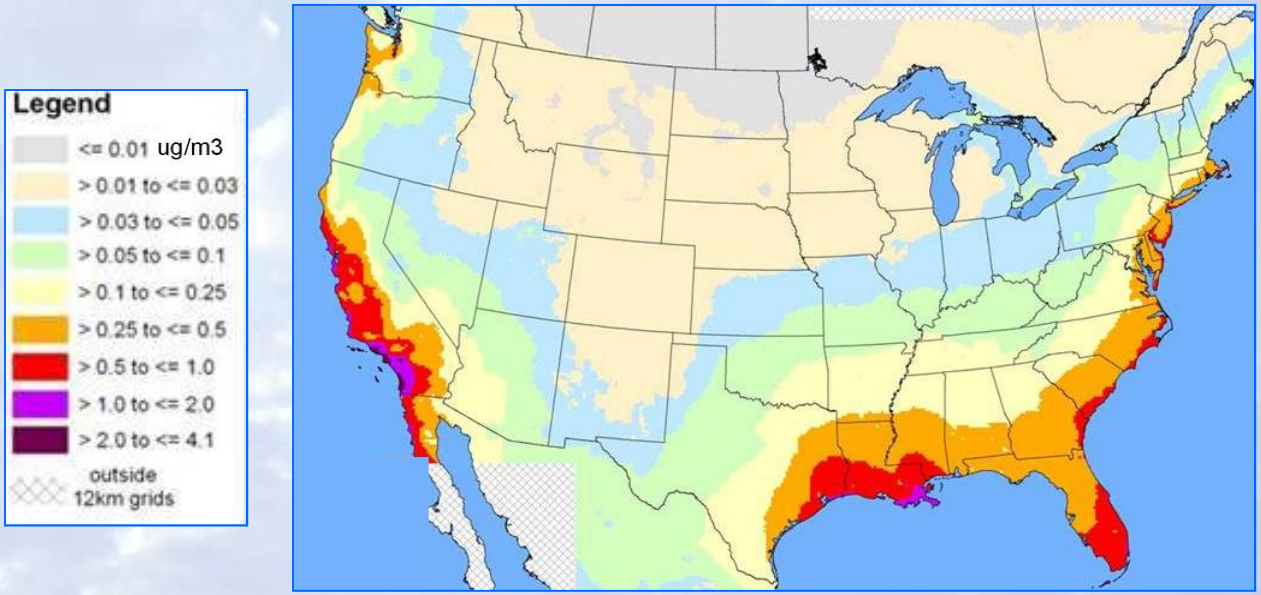
Emission Control Area (ECA)

- Proposed by U.S. and Canada to IMO in 2009
- Two phases of fuel sulfur standards
  - Aug. 1, 2012: 10,000 ppm S (residual fuel)
  - Jan. 1, 2015: 1,000 ppm S (distillate fuel)
- Tier III NOx standards (80% reduction) in 2016



ECA Benefits and Costs

- Large benefits (2030)
  - Reductions of 143,000 tons PM, 1.2 million tons NOx, and 1.3 million tons SOx
  - 12,000-31,000 premature deaths avoided
  - $110-$270 billion in health benefits
  - $3.1 billion in costs
- Emission reductions reach well inland of coasts



Estimated ECA $PM_{2.5}$ Reductions

Mercury Air Toxics Rule

MATS covers approximately 1,400 coal- and oil-fired units > 25 MW at about 600 power plants nationwide

Includes units that burn coal, coal refuse, oil, or a synthetic gas derived from coal either exclusively, in combination together, or in any combination with other supplemental fuels. Natural gas power plants are not affected by this rule.

- MATS covers emissions of all hazardous air pollutants from power plants
- **The rule sets a few standards (for mercury, acid gases, non-mercury metal air toxics, and organic air toxics) to limit emissions of these pollutants**
  - Most of these standards are numeric emissions limits; the standard for organic air toxics is a work practice standard
  - In some cases, these standards are "surrogates" for a number of pollutants. (e.g. setting a numeric HCl emissions limit to control all acid gases)
  - For many standards, sources can choose to meet the primary standard or an alternate standard. (e.g. MATS also sets a numeric SO_2 emissions limit as an alternate surrogate for acid gases)
- The CAA requires EPA to set the emission standards for existing sources at a level that is at least as stringent as the emission reductions achieved by the average of the best performing 12% of sources in the category

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Compliance Timeline Overview

- Existing sources generally will have up to 4 years if they need it to comply with MATS.
  - This includes the 3 years provided to all sources by the Clean Air Act (to March/April 2015). EPA's analysis continues to demonstrate that this will be sufficient time for most, if not all, sources to comply.
  - Under the Clean Air Act, state permitting authorities can also grant an additional year (to March/April 2016) as needed for technology installation .
- EPA is also providing a clear pathway for reliability critical units to obtain a schedule with up to an additional year to achieve compliance. This pathway is described in a separate enforcement policy document – discussed later in the presentation.

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OECA Policy Memorandum

- Memo describes EPA's "intended approach regarding the use of section 113(a) administrative orders ('AOs') with respect to sources that must operate in noncompliance with the MATS for up to a year to address a specific and documented reliability concern."
  - EPA intends to address other situations "as it has in the past, by assessing each situation on a case-by-case basis, at the appropriate time, to determine the appropriate enforcement response and resolution."
- A source that qualifies for 1-year extension under section 112(i)(3)(B) (4th year) may also qualify for an AO at the end of this extension.
- EPA will "rely for identification and/or analysis of reliability risks upon the advice and counsel of reliability experts including" FERC, RTOs and other planning authorities, NERC and the regional entities, and public utility commissions (PUCs).

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OECA Policy Memorandum, cont'd

- **To qualify for an AO in connection with the policy, an owner/operator should take the following steps**:
  - Within 1 year of the MATS effective date, provide notice of compliance plans to the relevant Planning Authority
  - Timely submit an AO request to EPA, with a copy to FERC
    - For a retiring/deactivating unit, not less than 180 days before the applicable compliance date (3 or 4 years);
    - Separate time-frame for a unit that, for specified reliability reasons, needs to operate in noncompliance with the MATS because of a delay in installation of controls at that unit or another unit.
  - Provide notice of the AO request to relevant Planning Authority, PUC (where applicable), and state or tribal environmental authorities

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OECA Policy Memorandum, cont'd

- **Summary of Elements of a Complete AO request:**
  - Copies of early notice to Planning Authority of compliance plans, *or* an explanation of why early notice was not practicable and a demonstration of notice as soon as was practicable
  - Written analysis of the reliability risk (as specified in the policy)
  - Planning Authority written concurrence in the reliability analysis (or a separate and equivalent analysis), *or* a written explanation of why the Planning Authority concurrence or separate and equivalent analysis cannot be provided
  - Copies of written comments from third parties (as specified)
  - Plan to achieve compliance with the MATS no later than 1 year after the applicable compliance date and, where practicable, written demonstration of the plan to resolve the underlying reliability problem (as specified)
  - Identification of the level of operation required to avoid the documented reliability risk and proposal for operational limits and/or work practices to minimize or mitigate hazardous air pollutant emissions to the extent practicable

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OECA Policy Memorandum, cont'd

- Consultation: "In evaluating a request for an AO submitted in contemplation of this policy, although the EPA's issuance of an AO is not conditioned upon the approval or concurrence of any entity, the EPA intends to consult, as necessary or appropriate on a case-by-case basis, with FERC and/or other entities with relevant reliability expertise."

- Advance Written Notice: "[A]lthough an AO cannot be issued under section 113(a) prior to the MATS Compliance Date [3 or 4 years], the EPA intends – where the owner/operator has timely submitted a complete request and has provided appropriate cooperation – to give the owner/operator as much advance written notice as practicable of the Agency's plans with regard to such an AO."

- Penalties: "The EPA does not intend to seek civil penalties for violations of the MATS that occur as a result of the operation for up to one year in conformity with an AO issued in connection with this policy, unless there are misrepresentation in the materials submitted in a request for an AO."

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Next Steps

- EPA is conducting outreach efforts with a broad range of affected stakeholders.
- On issues related to electric reliability, EPA will be coordinating that outreach with DOE and FERC.

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End of Presentation

Phillip Brooks, Director
Air Enforcement Division