

U.S. EPA Region 4 Regulatory Update

*Air & Waste Management Association
Southern Section Conference*

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Today's Topics

Administrative Updates

Air Program Update

- Air Quality Improvements
- Progress on NAAQS and Haze Implementation
- Clean Air Act Regulatory and Policy Activity
- Voluntary Activities

Questions



New Senior Management



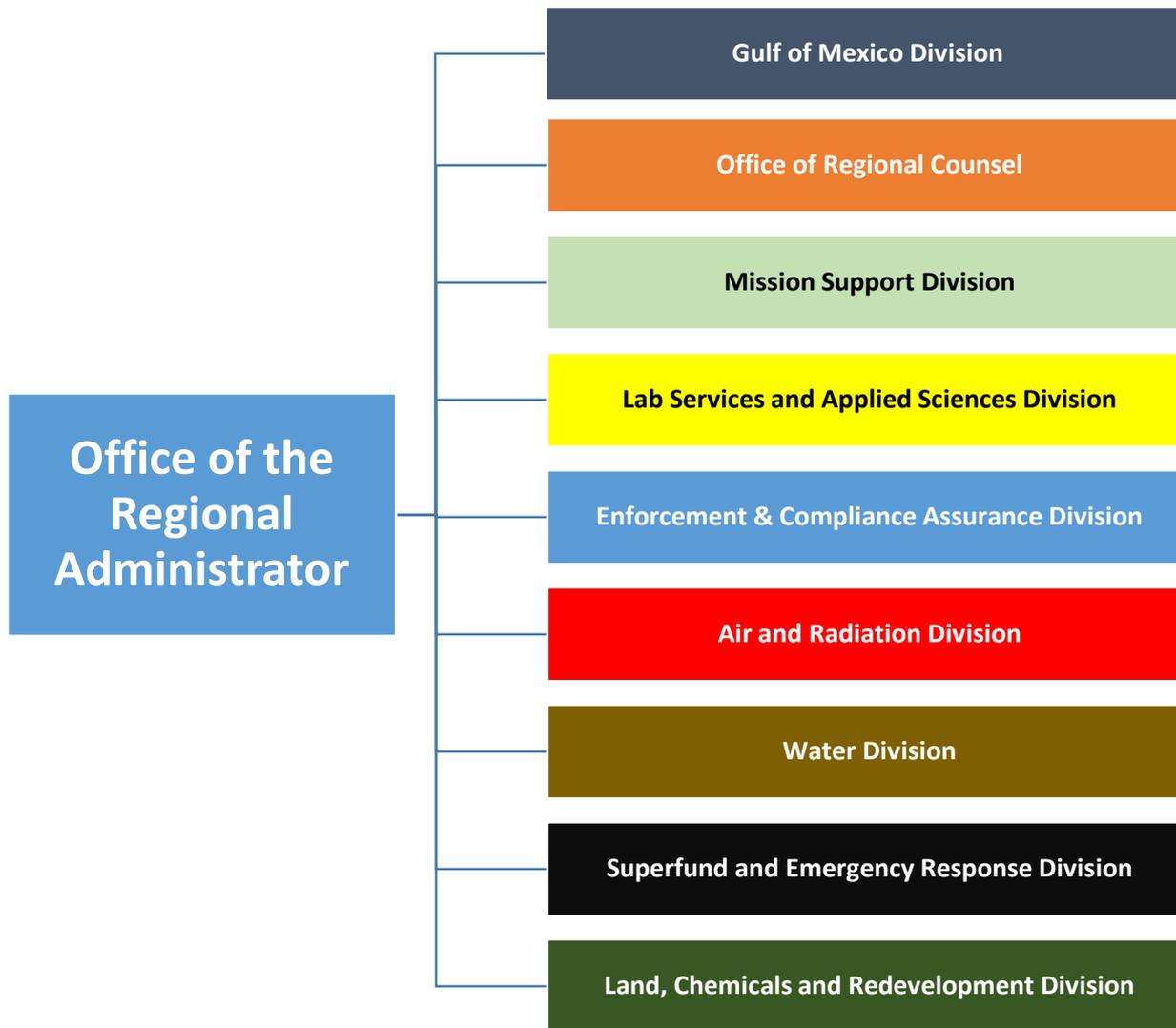
Mary S. Walker
Regional Administrator
EPA Region 4



Beverly H. Banister
Deputy Regional Administrator
EPA Region 4



EPA Regional Office Reorganization





Air and Radiation Division

Air and Radiation Division

Carol L. Kemker, Acting Director

Ken Mitchell, Deputy Director

Immediate Office Staff

Stuart Perry, Chief, Grants & Strategic Planning Office

404-562-9077

Air Planning & Implementation Branch

Scott Davis

(Todd Rinck, Acting)

Air Permits Section
Heather Ceron
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Air Regulatory
Management Section
Lynorae Benjamin

Air Analysis & Support Branch

Gregg Worley

Air Data & Analysis
Section
Todd Rinck
(Rick Gillam, Acting)

Communities & Air
Toxics Section
Amber Davis

New Organization



Some EPA Focus Areas – National and R4

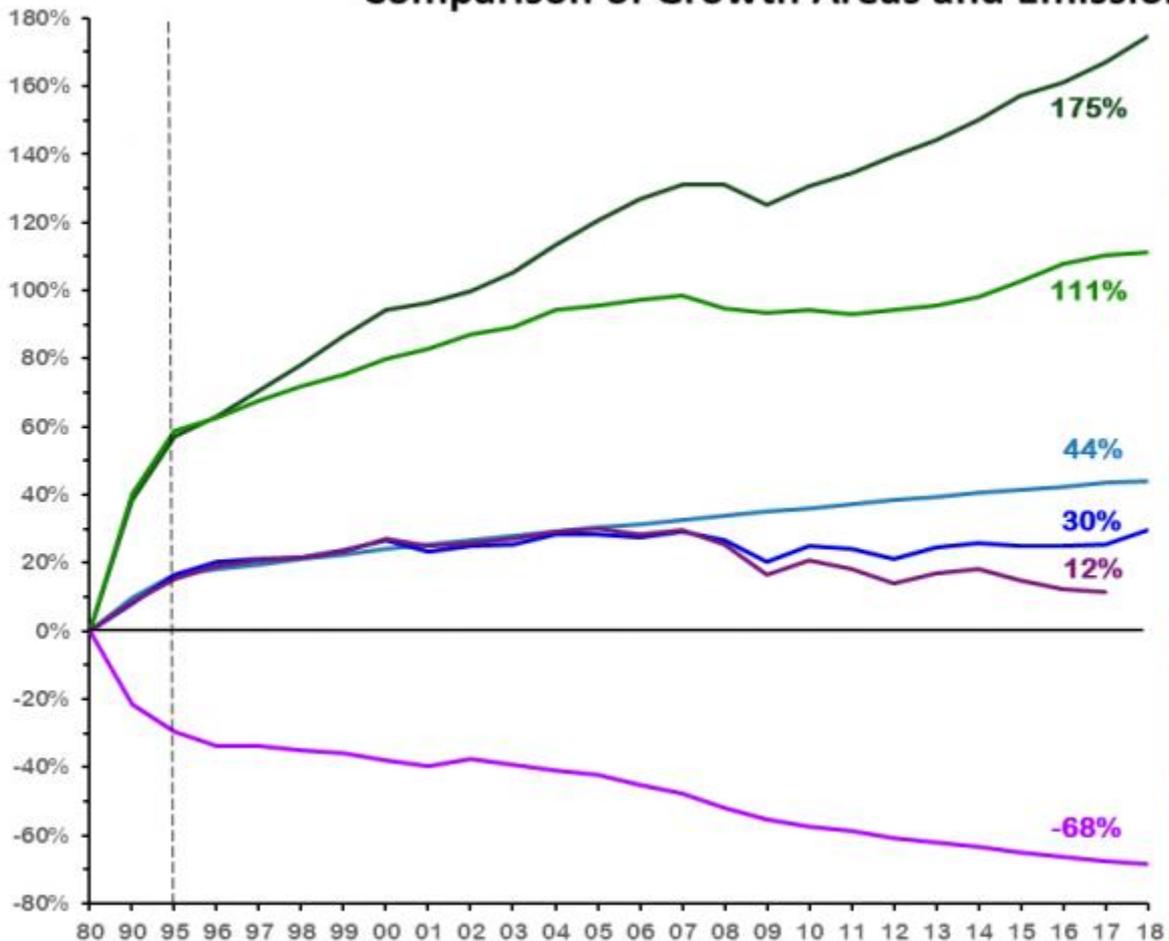
Region 4 is working with its stakeholders to implement the regulatory requirements of the Clean Air Act and to look for risk reduction opportunities through voluntary efforts

- NAAQS and Haze
- Affordable Clean Energy Rule
- MATS
- Methane Rule - oil/gas (40 CFR 60, 0000)
- NSR
- CAFE Standards



Comparison of Growth vs Emissions

Comparison of Growth Areas and Emissions, 1980-2018



Gross Domestic Product



Vehicles Miles Traveled



Population



Energy Consumption



CO₂ Emissions



Aggregate Emissions
(Six Common Pollutants)



Updating the NAAQS Review Process

- **May 9, 2018:** EPA Administrator outlined five principles for EPA to follow in future NAAQS reviews
 - Meet statutory deadlines;
 - Address all CAA provisions for NAAQS reviews;
 - Streamline and standardize the process for development and review of key policy-relevant information;
 - Differentiate science and policy judgments in the NAAQS review process; and
 - Issue timely implementation regulations and guidance



NAAQS Reviews

(August 2019)

| | Ozone | Lead | Primary NO ₂ | Primary SO ₂ | Secondary (Ecological) NO ₂ , SO ₂ , PM ¹ | PM ² | CO |
|---|---|------------------|-------------------------|-------------------------|--|--|----------|
| Last Review Completed (final rule signed) | Oct. 2015 | Sept 2016 | April 2018 | Feb 2019 | Mar 2012 | Dec 2012 | Aug 2011 |
| Recent or Upcoming Major Milestone(s) | <u>Fall 2019</u> Draft ISA and Draft PA ³ <u>Early 2020</u> Proposal <u>Late 2020</u> Final | TBD ⁴ | TBD | TBD | <u>Timing of next steps is TBD</u> Final ISA; draft REA/PA | September 2019 Draft PA <u>Early 2020</u> Proposal <u>Late 2020</u> Final | TBD |

Additional information regarding current and previous NAAQS reviews is available at: <http://www.epa.gov/ttn/naaqs/>

¹ Combined secondary (ecological effects only) review of NO₂, SO₂, and PM

² Combined primary and secondary (non-ecological effects) review of PM

³ IRP – Integrated Review Plan; ISA – Integrated Science Assessment; REA – Risk and Exposure Assessment; PA – Policy Assessment

⁴ TBD = To be determined



2010 SO₂ NAAQS Review

| 2010 Primary SO ₂ NAAQS | |
|------------------------------------|---|
| Standard | 75 parts per billion |
| Averaging Time | 99 th percentile of 1-hour daily maximum concentrations, averaged over 3 years |
| At Risk Population | Children, Elderly, Asthmatics |
| Current Nonattainment Areas | 40 Areas in 16 States |

In February 2019, EPA retained the existing primary NAAQS for SO₂ based on the agency's judgment that the current NAAQS protects the public health, with an adequate margin of safety, including the health of at-risk populations with asthma.



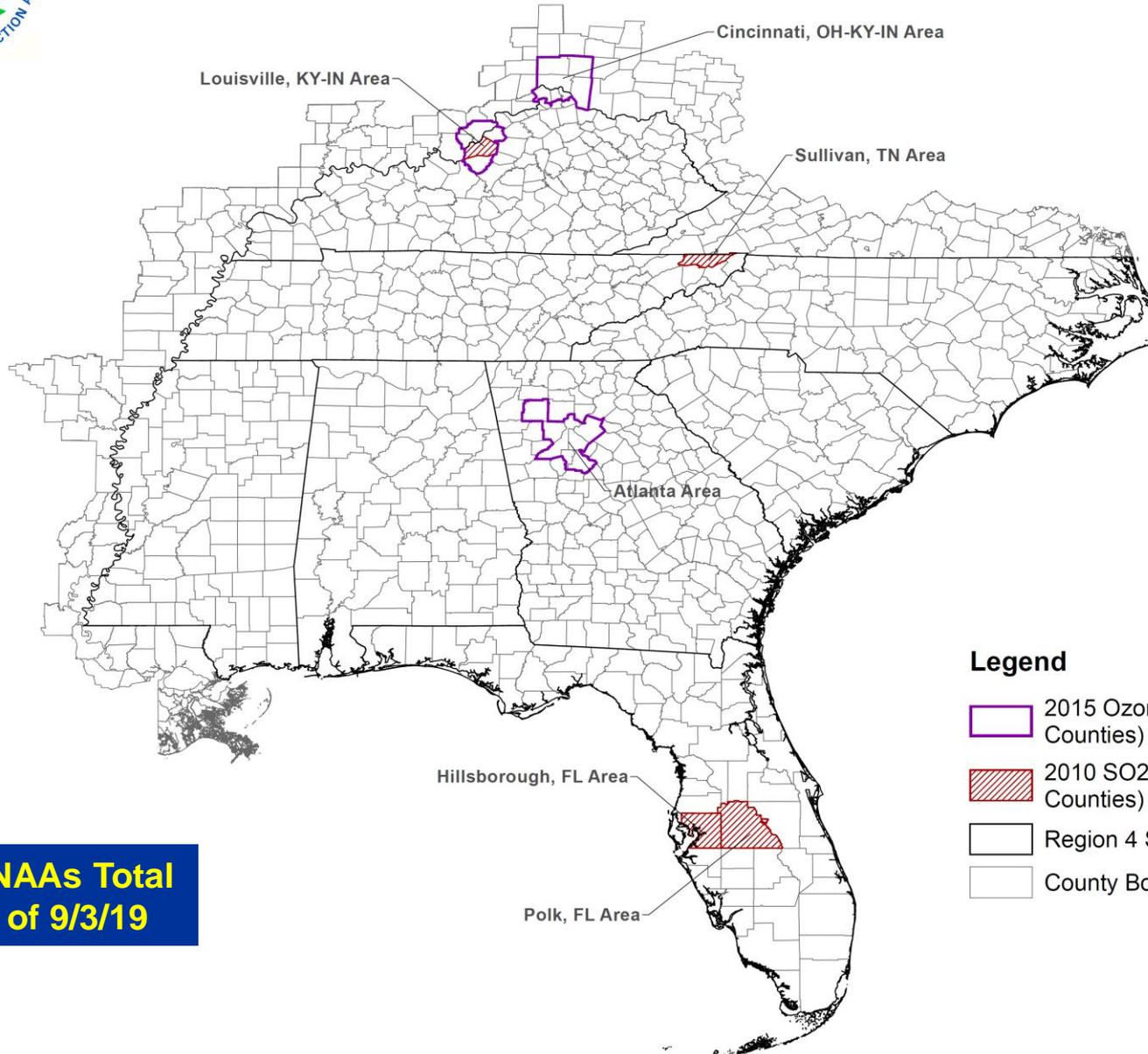
Progress on Ozone and PM_{2.5} Attainment in Region 4

| OZONE | 1997 NAAQS (2004 Designations) | 2008 NAAQS (2012 Designations) | 2015 NAAQS (2018 Designations) |
|----------------------------------|--------------------------------------|--------------------------------------|--------------------------------------|
| Initial Nonattainment Areas | 14 | 5 | 3 |
| Areas Redesignated to Attainment | 14 | 5 | 0 |
| Current Nonattainment Areas | 0 | 0 | 3 |

| PM _{2.5} | 1997 PM _{2.5} NAAQS (2005 Designations) | 2006 PM _{2.5} NAAQS (2009 Designations) | 2012 PM _{2.5} NAAQS (2015 Designations) |
|----------------------------------|---|---|---|
| Initial Nonattainment Areas | 11 | 2 | 0 |
| Areas Redesignated to Attainment | 11 | 2 | 0 |
| Current Nonattainment Areas | 0 | 0 | 0 |



Current R4 Nonattainment Areas (all NAAQS Pollutants)



Legend

- 2015 Ozone NAAQS Current NAA (Partial Counties)
- 2010 SO2 NAAQS Current NAA (Partial Counties)
- Region 4 State Boundary
- County Boundary

**7 NAAs Total
as of 9/3/19**



2010 SO₂ Designations Process

Round 1: Completed August 2013 – EPA Region 4 designated 5 areas nonattainment based on existing monitors violating the standard*

Round 2: Completed June 30 and November 29, 2016 – EPA designated 65 areas in 24 states based on air dispersion modeling and 2013-2015 violating monitors (6 areas designated in Region 4)

Round 3: Completed December 21, 2017 and March 28, 2018 – EPA completed an additional round of designations for all remaining undesignated areas except where states have deployed new monitoring networks by January 1, 2017 if executed under the SO₂ Data Requirements Rule (DRR); one new area was designated nonattainment

Round 4: By December 31, 2020 – EPA must complete designations for all remaining areas (based on 2017-2019 monitoring data)

Rounds 1-3

EPA currently has five areas designated as nonattainment in three States in Region 4



Regional Haze Updates

- **9/11/18:** EPA Releases Regional Haze Reform Roadmap to Continue Improving Visibility and Reduce Regulatory Burdens
 - Enables efficient, timely, and effective implementation of the Regional Haze program today and in the future
- **12/20/18:** Regional Haze Technical Guidance was issued
- **8/20/19:** Guidance on Regional Haze SIPs for the Second Implementation Period issued
 - additional information and context regarding screening sources before in-depth analysis
 - consideration of visibility benefits along with the four statutory factors
 - EPA webinar regarding this guidance was held on September 10, 2019. (Slides are posted on EPA's website.)
- **Summer 2019:** Updated 2028 Visibility Modeling



Oil and Gas NSPS

8/28/19 – EPA signed proposed amendments to the 2016 NSPS for the Oil and Natural Gas industry

- This will remove regulatory duplication, while maintaining health and environmental protection from oil and gas sources that the Agency considers appropriate to regulate.
- The proposed amendments are estimated to save the oil and gas industry up to \$19 million a year, for a total of \$97 to \$123 million from 2019 through 2025
- The Agency continues to consider broad policy issues in the 2016 rule, including the regulation of greenhouse gases in the oil and natural gas sector

<https://www.epa.gov/controlling-air-pollution-oil-and-natural-gas-industry/proposed-improvements-2016-new-source>



Exceptional Events: Rule Implementation Update

Prescribed Fire: Prescribed Fire on Wildland that May Influence Ozone and Particulate Matter Concentrations (August 2019)

High Winds: Guidance on the Preparation of Demonstrations in Support of Requests to Exclude Air Quality Data Influenced by High Wind Dust Events Under the 2016 Exceptional Events Rule (April 2019)

Data Modification: Clarification Memo on additional Methods, Determinations and Analyses to Modify Air Quality Beyond Exceptional Events (April 2019)



<https://www.epa.gov/air-quality-analysis/final-2016-exceptional-events-rule-supporting-guidance-documents-updated-faqs#guidance>



Mercury and Air Toxics Standards (MATS)

- **12/27/18** -- EPA issued proposed revised Supplemental Cost Finding for MATS, as well as the Clean Air Act required “risk and technology review”
- The Agency proposes to determine that it is not “appropriate and necessary” to regulate HAP emissions from power plants under Section 112 of the Clean Air Act
- However, the emission standards and other requirements of the MATS rule, first promulgated in 2012, would remain in place since EPA is not proposing to remove coal- and oil-fired power plants from the list of sources that are regulated under Section 112 of the Act
- Public hearing was Monday, March 18, 2019
- Comment Period closed April 17, 2019

www.epa.gov/MATS



Recent Risk and Technology Review Rules

The Risk and Technology Review (RTR) is a combined effort to evaluate both risk and technology as required by the Clean Air Act (CAA) after the application of maximum achievable control technology (MACT) standards.

Recent Final RTR (March 2019) :

- Surface Coating of Large Appliances
- Printing, Coating, and Dyeing of Fabrics and Other Textiles
- Surface Coating of Metal Furniture

<https://www.epa.gov/stationary-sources-air-pollution/surface-coatings-large-appliances-printing-coating-and-dyeing>



Final CISWI Technical Amendments

- **3/18/19:** EPA finalized amendments to the 2016 NSPS and emission guidelines for new and existing sources (respectively) for Commercial and Industrial Solid Waste Incineration Units (CISWI)
 - Codifies the emission limit for mercury (Hg) for waste-burning kilns in a production-based limit
 - Extends performance evaluation tests timeline from 60 days to 180 days
 - Extends timeline for electronic data reporting
 - Adds provisions for particulate matter, dioxins, hydrogen chloride (HCl), sulfur dioxide, nitrogen oxide and Hg for demonstrating initial compliance by using a continuous emission monitoring system
 - Provides clarifications on reduced testing requirements, deviation reporting, continuous opacity monitoring systems and air curtain incinerators

<https://www.epa.gov/stationary-sources-air-pollution/commercial-and-industrial-solid-waste-incineration-units-ciswi-new>



Affordable Clean Energy Rule (ACE)

- Final ACE Package includes three distinct, separate, and independent actions:
 - Repeal of the Clean Power Plan (CPP)
 - ACE (Emission Guidelines for Greenhouse Gas Emissions from Existing Electric Utility Generating Units)
 - Revisions to Clean Air Act section 111(d) Emission Guidelines Implementing Regulations
- ACE published in the *Federal Register* July 8, 2019
- New Source Review (NSR) reform not promulgated with ACE
 - EPA intends to take action at a later date

<https://www.epa.gov/stationary-sources-air-pollution/affordable-clean-energy-rule>



ACE Background

- ACE proposal published August 30, 2018
 - EPA received > 500K comments, held 1 public hearing
- ACE is an emission guideline (EG) promulgated under CAA section 111(d)
 - EGs are a less common type of regulation
 - Rely on cooperative federalism to achieve emission reductions
- Roles can be summarized by a three-step process:
 - 1. EPA**
 - identifies Best System of Emission Reduction (BSER)
 - 2. States**
 - Establish standards of performance for designated facilities within jurisdiction – standards consistent with emission limitation achievable by application of BSER
 - Submit plans to EPA for approval
 - 3. Affected sources**
 - comply with standards of performance (set by states) using most appropriate technologies or techniques (sources do not have to apply BSER technologies to comply with standards)



ACE Designated Facilities

- Coal-fired electric utility steam generating units (EGUs) with nameplate capacity greater than 25 MW-net and commenced construction on or before January 8, 2014
- States in contiguous U.S. are affected by this subpart
 - States are required to submit a plan or negative declaration to regulate designated facilities by July 8, 2022 (within three years of publication)
- EPA still evaluating information and data for other fossil fuel-fired EGUs



ACE Timing

- State plans due **July 8, 2022** (three years from publication of final rule)
- Once submitted, EPA has 6 months to determine completeness
- EPA has 12 months from completeness determination to approve a plan submission
- EPA has 2 years from a state's failure to submit a state plan or disapproval of a plan submission to promulgate Federal plan
- Compliance schedules for designated facilities must initiate within 24 months after a state plan submission
 - If compliance schedule initiates beyond 24 months, increments of progress must be included for those designated facilities



Landfills

- **08/26/19:** EPA issued two actions related to timing and implementation of the 2016 emission guidelines for existing MSW landfills
 - Final rule to align state plan timing requirements with the updated Clean Air Act section 111(d) implementing regulations that were finalized with the Affordable Clean Energy rule on July 8, 2019
 - Proposed federal plan in response to a court order for EPA to finalize a federal plan by November 6, 2019

<https://www.epa.gov/stationary-sources-air-pollution/municipal-solid-waste-landfills-new-source-performance-standards>



Ethylene Oxide (EtO)

- **In some census tracts, 2014 NATA (released in August 2018) estimated cancer risks greater 100 in 1 million - mostly from EtO**
 - This number refers to the upper end of what EPA *generally* has considered to be acceptable risk in its rulemaking process
 - 100 in a million (1 in 10,000) is not a standard or a regulatory action level – it tells us we need to look more closely to see if there is an issue
- **How did EtO come to be an issue in the 2014 NATA?**
 - The most recent health science information for ethylene oxide is from 2016
 - That's when EPA updated the information that we use to estimate the risk of developing cancer if we are exposed to ethylene oxide for 24-hours a day, 365 days a year, for 70 years
 - The 2016 information we have on how toxic ethylene oxide is has changed from what we previously knew (it is more toxic).



What EPA is doing to address EtO?

- **Reviewing Clean Air Act regulations for facilities that emit EtO:**
 - EPA has begun reviewing its air toxics emissions standards for sources that emit ethylene oxide
 - For air toxics, including EtO, the law requires EPA to set limits on how much different industries can put into the air
 - There is not a set level of EtO that is allowed in the outdoor air (like for ozone)
- **Getting additional information on EtO emissions**
 - EPA is working with state air agencies to get additional information how much EtO facilities put into the air
 - Focusing first on facilities in areas where NATA told us we needed to take a closer look
 - What we are learning will help us as we review our regulations
 - It also will help the us understand whether more immediate emission reduction steps are necessary in any particular locations



Title V Permitting

- **Rulemakings & Guidance in Progress**

- Final Title V Petitions Process Rulemaking – Fall 2019
- “Reclassification of Major Sources as Area Sources Under Section 112” proposed rulemaking. *See* 84 FR 36304, July 26, 2019
 - Public comment period closes September 24, 2019
- Multi-media EPA Permit Oversight Guidance – Fall 2019

- **Process Improvements (LEAN/Kaizen process)**

- Electronic Permits System (EPS)
 - For submittal of State permit documents to EPA
 - Can be used for State public notice and permit document storage
 - EPS has been piloted by States and ECOS
 - Full deployment – i.e. available to all States – January 2020
- Central Data Exchange (CDX) for receipt of Title V petitions
- Developing common resources such as templates, training, and resource sharing for EPA permit issuance



Updates to the CAFE Standards

8/14/18 – In conjunction with the National Highway Traffic Safety Administration, EPA proposed the Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule for the Model Years 2021-2026 Passenger Cars and Light Trucks

- Rule proposes to amend certain existing CAFE and GHG standards for passenger cars and light trucks for model years 2021 – 2026]
 - The preferred alternative would retain the MY 2020 standards
 - Reflects a balance of safety, economics, technology, fuel conservation, and pollution reduction
- The comment period ended October 26, 2018.

<https://www.epa.gov/regulations-emissions-vehicles-and-engines/safer-affordable-fuel-efficient-safe-vehicles-proposed>



Renewable Fuel Standards

July 5, 2019: EPA issued proposed volume requirements under the Renewable Fuel Standard program for cellulosic biofuel, advanced biofuel, and total renewable fuel for calendar year 2020. EPA also proposed biomass-based diesel volume standards for calendar year 2021.

| Proposed and Final Renewable Fuel Volume Requirements for 2019-2021 | | | | |
|---|---------------|---------------------------|--------------------------|--------------------------|
| | 2019 Final | 2020 Statutory Volumes | 2020 Proposed Volumes | 2021 Proposed Volumes |
| Cellulosic biofuel (billion gallons) | 0.42 | 10.50 | 0.54 | n/a |
| Biomass-based diesel (billion gallons) | 2.1 | ≥1.0 | N/A ^c | 2.43 |
| Advanced biofuel (billion gallons) | 4.92 | 15.00 | 5.04 | n/a |
| Renewable fuel (billion gallons) | 19.92 | 30.00 | 20.04 | n/a |
| Notes: ^c All values are ethanol-equivalent on an energy content basis, except for BBD which is biodiesel-equivalent. | | | | |

<https://www.epa.gov/renewable-fuel-standard-program/regulations-and-volume-standards-renewable-fuel-standards>



Voluntary Programs and Successes

- Advance Program
- Southeast Diesel Collaborative (SEDC)





Advance Program

The Advance Program promotes local actions in attainment areas to reduce ozone and/or fine particle pollution (PM_{2.5}) to help these areas continue to maintain the National Ambient Air Quality Standards (NAAQS).

Program Goals:

- Help attainment areas ensure continued health protection
- Better position areas to remain in attainment
- Efficiently direct available resources toward actions to address ozone and PM_{2.5} problems quickly

**Upcoming 5th Annual Forum:
November 5-7, 2019 in Atlanta, GA**

Participants in Region 4

SC – entire state
Catawba Tribe, SC
Middle GA (including Robins Air Force Base)
Louisville, KY
Cumberland County, NC
(including Fort Bragg)
Charlotte, NC
NC – Entire State

ADVANCE
A U.S. Environmental Protection Agency Program

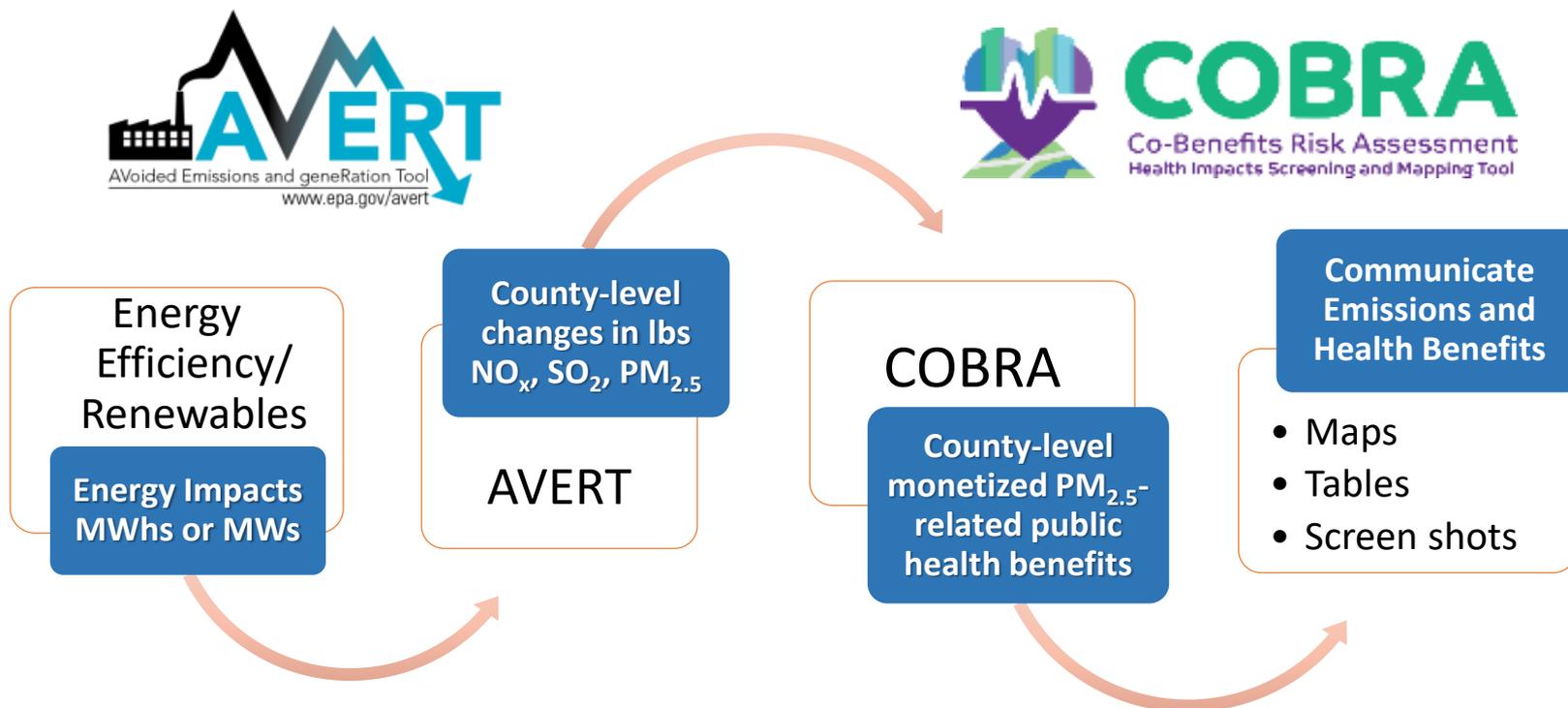
EPA Region 4 contact: Kelly Sheckler 404-562-9222; sheckler.kelly@epa.gov
<https://www.epa.gov/advance>



Air Quality and Health Benefits Quantification

EPA is uniquely positioned to provide public health related tools and resources:

- **Updated AVERT and COBRA** – now you can more easily estimate AQ and Health benefits of energy efficiency and renewable energy programs using both tools together.





Southeast Diesel Collaborative (SEDC)

- Voluntary public/private partnership formed in 2006 (part of the National Clean Diesel Campaign), focused on clean diesel opportunities that incorporate Energy, the Environment and Economics
- Diverse Partners from government, industry, state/local groups with the goal of improving air quality and public health by reducing emissions from existing diesel engines
- Annual funding under the Diesel Emissions Reduction Act (DERA)
- Upcoming 14th Annual Partners Meeting is scheduled for **September 24 – 26, 2019** in Chattanooga, TN





Questions?

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ACE -- Appendix



ACE BSER

- Consistent with legal rationale to repeal CPP, EPA may only consider systems of emission reduction that can be applied at and to a designated facility and that lead to continuous emission reductions
- For ACE, EPA determined BSER for existing coal-fired EGUs to be heat rate improvements (HRI, also referred to as efficiency improvements)
- EPA evaluated other systems of reductions but did not include them as part of BSER:
 - Natural gas repowering
 - Natural gas co-firing and refueling
 - Biomass co-firing
 - Carbon capture and storage



ACE BSER

- Even though a large number of potential HRI options may apply, EPA limited list of BSER technologies to ones that are broadly applicable with significant HRI at reasonable cost
- These “candidate technologies” include:
 - Neural Network/Intelligent Sootblower
 - Rebuild/Replace Boiler Feed Pumps
 - Air Heater and Duct Leakage Control
 - Variable Frequency Drives
 - Steam Turbine Blade Path Upgrades
 - Redesign/Replace Economizer
 - Implement Best Operating and Maintenance (O&M) Practices
- EPA also provided, as part of its obligation, the degree of emission limitation achievable (*i.e.*, level of stringency) as ranges of expected improvement associated with each candidate technology

Most Impactful HRI Measures and Range of their HRI Potential (%) by EGU Size

| HRI Measure | < 200 MW | | 200 - 500 MW | | > 500 MW | |
|--|---|-----|--------------|-----|----------|-----|
| | Min | Max | Min | Max | Min | Max |
| Neural Network/Intelligent Sootblowers | 0.5 | 1.4 | 0.3 | 1.0 | 0.3 | 0.9 |
| Boiler Feed Pumps | 0.2 | 0.5 | 0.2 | 0.5 | 0.2 | 0.5 |
| Air Heater & Duct Leakage Control | 0.1 | 0.4 | 0.1 | 0.4 | 0.1 | 0.4 |
| Variable Frequency Drives | 0.2 | 0.9 | 0.2 | 1.0 | 0.2 | 1.0 |
| Blade Path Upgrade (Steam Turbine) | 0.9 | 2.7 | 1.0 | 2.9 | 1.0 | 2.9 |
| Redesign/Replace Economizer | 0.5 | 0.9 | 0.5 | 1.0 | 0.5 | 1.0 |
| Improved Operating and Maintenance (O&M) Practices | Can range from 0 to > 2.0 % depending on the unit's historical O&M practices. | | | | | |



ACE State Plan Development

- States establish standards of performance for each designated facility within their jurisdiction and submit state plans to EPA by July 8, 2022
- Each source-specific standard of performance must be based on emission limitation achievable by application of BSER
- Standards must be in form of an emission rate, *e.g.*, pounds of CO₂ per megawatt hour (lb CO₂/MWh)
- States have flexibility establishing standards of performance and designing compliance requirements, such as:
 - How to determine applicability of candidate technologies for each source
 - How to establish baseline emissions prior to application of BSER
 - How to account for variable emission performance (*e.g.*, due to changes in utilization rate, performance degradation, etc.) at designated facilities
 - How to establish appropriate compliance timelines



ACE State Plan Development

- CAA section 111(d) also provides that states shall be permitted, in establishing a standard, to take into consideration, among other factors, remaining useful life of existing source to which such standard applies
- Other factors states may consider:
 - Unreasonable cost of control resulting from plant age, location, or basic process design (*e.g.*, physically impossible to install necessary control equipment)
 - Recent, independent installation of a candidate technology (or technologies)
 - Interactions that cause some HRI candidate technologies to not be as effective and therefore not cost-reasonable



ACE State Plan Development

- **Owners/operators of designated facilities may comply with standard of performance however they choose as long as compliance measures:**

- Are capable of being applied to and at affected source
- Achieve emission reductions at source that are measurable using data, emissions monitoring equipment, or other methods to demonstrate compliance

(These two criteria notably exclude averaging and trading options (including within facility averaging and trading) and biomass co-firing as compliance options)

- **Owners/operators of designated facilities may use for compliance purposes:**

- Non-BSER HRI measures
- Natural gas co-firing
- Carbon capture and storage



ACE State Plan Submissions

- **State plans must:**
 - detail approach or methods used to apply BSER and establish standards of performance
 - identify EGUs within their borders that meet applicability requirements and are, therefore, considered a designated facility under ACE
 - include calculations relied upon when applying BSER to establish standards of performance
 - include appropriate requirements for monitoring, reporting, and recordkeeping to ensure they adequately provide for implementation and enforcement of standards of performance
- **EPA plans to provide an electronic means (*e.g.*, SPeCS) for states to submit plans**