# **Introduction to the Clean Air Act**

Presented on behalf of ELI by Derek R. McDonald Baker Botts LLP May 1, 2024



# **Clean Air Act - The History**

- Precursors to Clean Air Act
  - Air Pollution Control Act of 1955
  - Clean Air Act of 1963
  - Air Quality Act of 1967
- Clean Air Amendments of 1970
  - Implemented many of the current requirements of the Act
- Clean Air Act Amendments of 1977
- Clean Air Act Amendments of 1990



## **Clean Air Act - The Titles**

- Title I Air Pollution Prevention and Control
  - Air Quality and Emission Limitations
    - National Primary and Secondary Ambient Air Quality Standards
    - State Implementation Plans
    - Standards of Performance for New Stationary Sources
    - Hazardous Air Pollutants
    - Federal Enforcement
  - Prevention of Significant Deterioration of Air Quality
  - Plan Requirements for Nonattainment Areas
- Title II Emission Standards for Moving Sources
- Title III General Provisions
  - Includes definitions and citizen suit process
- Title IV Acid Deposition Control
- Title V [Operating] Permits
- Title VI Stratospheric Ozone Protection

## **Major Clean Air Act Programs**

- National Primary and Secondary Ambient Air Quality Standards (NAAQS)
- State Implementation Plans (SIPs)
- Federal New Source Review (NSR) Preconstruction Permits
  - Prevention of Significant Deterioration (PSD) Permits
  - Nonattainment New Source Review (NNSR) Permits
- Title V Operating Permits Program
- New Source Performance Standards (NSPSs)
- Maximum Achievable Control Technology (MACT) Standards and National Emission Standards for Hazardous Air Pollutants (HAPs)
- Mobile Sources/Fuels

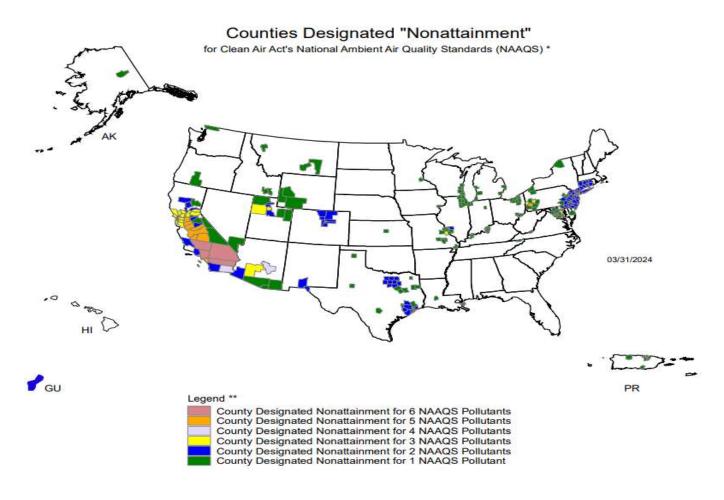
## **National Ambient Air Quality Standards (NAAQS)**

- Six "Criteria Pollutants" Section 108
  - Ozone
     Nitrogen dioxide (NO<sub>2</sub>)
  - Sulfur dioxide (SO<sub>2</sub>)
     Lead
  - Particulate matter (PM)Carbon monoxide (CO)
- Promulgation of NAAQS Section 109
  - Primary NAAQS Protect "public health" with an "adequate margin of safety"
  - Secondary NAAQS Protect "public welfare" from adverse effects
- Five-year Review and, If Appropriate, Revise
- New or Revised NAAQS Trigger Two Mandatory Actions:
  - Designation of areas as meeting (attainment/unclassifiable) or not meeting (nonattainment)
  - State development of State Implementation Plans (SIPs)

# **Current NAAQS**

Pollutant [links to historical tables of NAAQS reviews]	Primary/ Secondary	Averaging Time	Level	Form	
Carbon Monoxide (CO)	Primary	8 hours	9 ppm	Not to be exceeded more than once per	
		1 hour	35 PPM	year	
Lead (Pb)	Primary and Secondary	Rolling 3-month average	0.15 µg/m³ <sup>(1)</sup>	Not to be exceeded	
Nitrogen Dioxide (NO <sub>2</sub> )	Primary	1 hour	100 ppb	98th percentile of 1-hour daily maximum concentrations, averaged over 3 years	
	Primary and Secondary	1 year	53 ppb <sup>(2)</sup>	Annual Mean	
Ozone (O <sub>3</sub> )	Primary and Secondary	8 hours	0.070 ppm <sup>a</sup>	Annual fourth-highest daily maximum 8-hour concentration, averaged over 3 years	
Particle Pollution (PM)	PM <sub>2.5</sub>	Primary	1 year	9.0 µg/m³	
		Secondary	1 year	15.0 µg/m³	
		24 hours	35 µg/m³	98th percentile, averaged over 3 years	
	PM <sub>10</sub>	Primary and Secondary	24 hours	150 <u>µg</u> /m³	
Sulfur Dioxide (SO₂)	Primary	1 hour	75 ppb <sup>4</sup>	99th percentile of 1-hour daily maximum concentrations, averaged over 3 years	
	Secondary	3 hours	0.5 ppm	Not to be exceeded more than once per year	

# **Counties Designated as Nonattainment**



<sup>\*</sup> The National Ambient Air Quality Standards (NAAQS) are health standards for Carbon Monoxide, Lead (1978 and 2008), Nitrogen Dioxide, 8-hour Ozone (2008), Particulate Matter (PM-10 and PM-2.5 (1997, 2006 and 2012), and Sulfur Dioxide.(1971 and 2010)

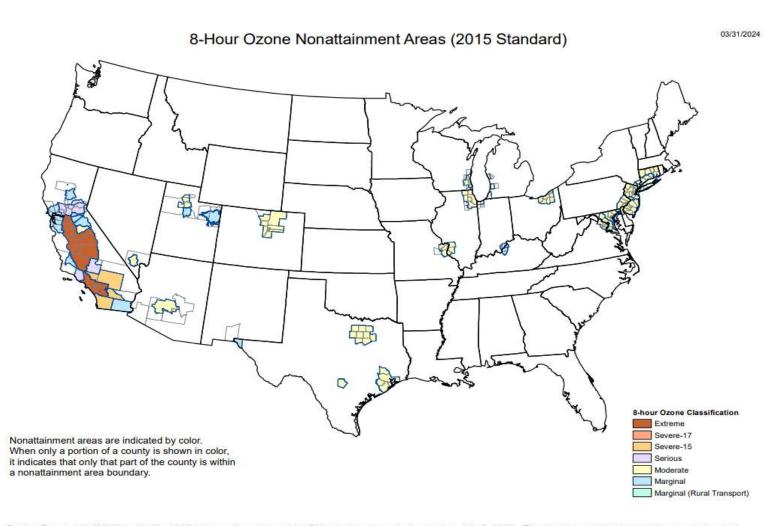
<sup>\*\*</sup> Included in the counts are counties designated for NAAQS and revised NAAQS pollutants.

Revoked 1-hour (1979) and 8-hour Ozone (1997) are excluded. Partial counties, those with part of the county designated nonattainment and part attainment, are shown as full counties on the map.

## **NAAQS - Ozone, Standards**

- 2015 Ozone NAAQS: 8-hour 70 ppb (Primary and Secondary)
  - Determination that more stringent standard necessary to protect the public health and welfare and the environment. 80 Fed. Reg. 65,291 (Oct. 26, 2015).
    - 2008 Ozone NAAQS: 8-hour 75 ppb (not revoked)
    - 1979 1-hour (124 ppb) and 1997 8-hour (84 ppb) NAAQS revoked in 2015
- 2020 5-yr Review
  - EPA (under Trump Administration) retains 8-hour 70 ppb primary and secondary ozone NAAQS. 85 Fed. Reg. 87,259 (Dec. 31, 2020).
  - EPA (under Biden Administration) announces intent to reconsider 2020 decision. Press Release (Oct. 29, 2021).
  - EPA motion for voluntary remand, without vacatur, of 2020 review (January 3, 2020) (New York v. EPA, No. 21-1028 (D.C. Cir.))
- 2008 Ozone NAAQS Implementation Rule (in 2015)
  - 80 Fed. Reg. 12,264 (Mar. 6, 2015)
- 2015 Ozone NAAQS Implementation Rule (in 2018)
  - 83 Fed. Reg. 62,998 (Dec. 6, 2018)

## **NAAQS - Measured Ozone Above 2015 Standards**



For the Ozone-8Hr (2015) Louisville, KY-IN nonattainment area, the Ohio portion was redesignated on July 5, 2022. The Kentucky portion has not been redesignated. The Kentucky portion of the Louisville area was reclassified from Marginal to Moderate on November 7, 2022.

The entire area is not considered in maintenance until all states in a multi-state area are redesignated.

## **NAAQS - Ozone, Challenges**

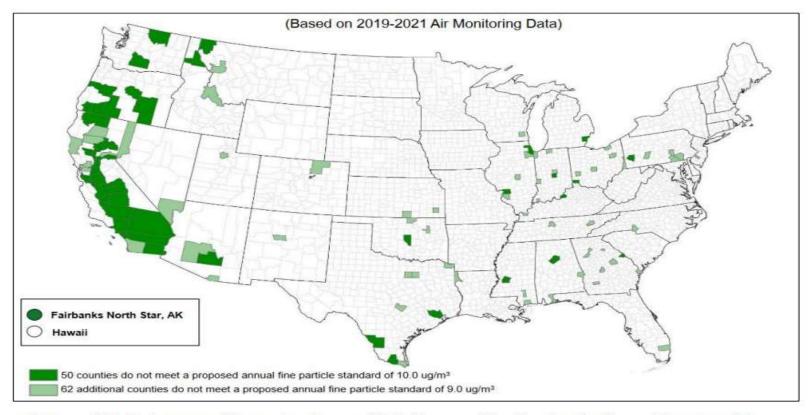
#### Ozone NAAQS challenges

- 2015 standard: Murray Energy Corp., et al. v. EPA, No. 15-1385 (D.C. Cir. Aug. 23, 2019) (Denied petitions for review of primary standard; remanded secondary standard for reconsideration; vacated grandfathering provision)
- 2020 ozone standard: New York v. EPA, No. 21-1028 (D.C. Cir. Feb. 2, 2024)
   (Granted EPA motion for remand without vacatur for reconsideration)
- Ozone Implementation Rule challenges
  - 2015 Implementation Rule: South Coast Air Quality Management Dist., et al. v. EPA, No. 15-1115 (D.C. Cir. Feb. 18, 2018)
    - Court vacates redesignation substitute mechanism and waiver of attainment deadlines in challenge to implementation rule for 2008 ozone standard
    - Section 110(*l*) anti-backsliding: "The Administrator shall not approve a revision of a plan if the revision would interfere with any applicable requirement concerning attainment and reasonable further progress (as defined in Section 171), or any other applicable requirement of this Act."
  - 2018 Implementation Rule: Sierra Club, et al. v EPA, No. 15-1465 (D.C. Cir. Jan 29, 2021)
    - Court vacates inter-precursor trading program; provisions specifying how states may meet reasonable further progress and contingency requirements

## **NAAQS - PM Standards**

- Evolving science
  - TSP (filterable only)
  - PM<sub>10</sub> (filterable and condensable)
  - PM<sub>2.5</sub> (condensable)
  - Secondary PM (chemical reactions in atmosphere)
- 2012 PM NAAQS (78 Fed. Reg. 3,086 (Jan. 15, 2013))
  - $PM_{10}$ : 150 µg/m<sup>3</sup> (primary and secondary 24-hour)
  - PM<sub>2.5</sub>: 12 μg/m³ (primary annual); 15 μg/m³ (secondary annual); 35 μg/m³ (primary and secondary 24-hour)
- PM<sub>2.5</sub> Implementation Rule (81 Fed. Reg. 58,010 (Aug. 24, 2016))
- 2020 5-yr Review
  - EPA (under Trump Administration) retains primary and secondary PM NAAQS. 85 Fed. Reg. 244 (Dec. 18, 2020).
  - EPA (under Biden Administration) announces intent to reconsider 2020 decision. Press Release (June 2021).
- 2024 PM NAAQS (89 Fed. Reg. 16,202 (March 6, 2024))
  - PM<sub>2.5</sub>: 9 μg/m³ (primary annual)
  - Other PM<sub>10</sub> and PM<sub>2.5</sub> primary and secondary standards retained

## **Areas That Would Likely Not Meet the Proposed PM2.5 NAAQS**



**Source:** U.S. Environmental Protection Agency (EPA), Proposed Decision for the Reconsideration of the National Ambient Air Quality Standards for Particulate Matter (PM), at https://www.epa.gov/system/files/documents/2023-01/PM%20Maps%20-%202022%20proposal%20%282%29.pdf.

**Notes:** Map reflects monitored counties with complete monitoring data. Future area designations will not be based on these data, but on future monitoring data. Of the 112 counties with 2019-2021 design values above 9.0  $\mu g/m^3$ , 24 counties are totally or partially contained in nonattainment areas for the current 2012 PM<sub>2.5</sub> standards. These counties are highlighted for illustrative purposes only, and the figure is not intended to project or predict the outcome of any forthcoming designation process. Future area designations will not be based on these data, but likely on monitoring data collected between 2021 and 2024.

# NAAQS - Sulfur Dioxide (SO<sub>2</sub>), Standards

- 2010 & 2012 SO<sub>2</sub> NAAQS
  - 2010 primary standard of 75 ppb (1-hour). 75 Fed. Reg. 35,520 (June 22, 2010)
  - 2012 secondary standard of 500 ppb (3-hour). 77 Fed. Reg. 20,218 (Apr. 3, 2012)
- 5-Year Review
  - EPA (under Trump Administration) retained SO<sub>2</sub> primary standard (84 Fed. Reg. 9,866 (Mar. 18, 2019))
  - EPA (under Biden Administration) proposes revisions to secondary standard (April 11, 2024)
    - Revise from the current 3-hour standard of 500 ppb, not to be exceeded more than once per year, to an annual average standard averaged over 3 years, set at a level within the range of 10 to 15 ppb
    - EPA is also soliciting comment on an annual average standard within the range of 5 to 10 ppb, and retaining the existing 3-hour standard in addition to an annual standard

# NAAQS - SO<sub>2</sub>, Implementation

- Sierra Club v. McCarthy, No. 13-3953 (N.D. Cal. Mar. 2, 2015), affirmed (9th Cir. Aug. 28, 2017)
  - Area designations deadlines established by consent decree
    - First round designations in July 2013 (based on 2009-2011 certified monitoring data)
    - Second round designations in June and November 2016 (based on updated data or for areas near large sources)
    - Third round designations in December 2017 (remaining undesignated areas without new monitors)
    - Fourth round designations in December 2020 (all remaining areas)
- EPA SO<sub>2</sub> Data Requirements Rule
  - 80 Fed. Reg. 51,052 (Aug. 21, 2015)
  - Requires states to use monitoring or modeling data to characterize current air quality around large sources

# NAAQS - Nitrogen Dioxide (NO<sub>2</sub>), Standards

- 2010 & 2012 NO<sub>2</sub> NAAQS
  - Primary standard of 100 ppb (1-hour) and 53 ppb (annual) (75 Fed. Reg. 6,474 (Feb. 9, 2010))
  - Secondary standard of 53 ppb (annual) (from 1971) (77 Fed. Reg. 20,218 (April 3, 2012))
- 5-Year Review
  - Primary standard retained in 2018 (83 Fed. Reg. 17,226 (Apr. 18, 2018))
  - Secondary standard retained in 2012 (77 Fed. Reg. 20,218 (Apr. 3, 2012))
  - Future reviews coupled with SO<sub>2</sub> secondary standard
- 2024 proposal (pre-publication) (April 11, 2024)
  - Retain 53 ppb, but taking comment on a range from 35 to 40 ppb (annual)

# NAAQS - Carbon Monoxide (CO), Lead (Pb), GHG Standards

- 2011 CO NAAQS
  - Primary 35 ppm (1-hour); 9 ppm (8-hour standard) (76 Fed. Reg. 54,294 (Aug. 31, 2011)
  - No secondary standard
- 2016 Lead (Pb) NAAQS
  - Primary and secondary 0.15  $\mu$ g/m<sup>3</sup> (3-month period) (81 Fed. Reg. 71,906 (Oct. 18, 2016))
- GHG NAAQS?
  - Center for Biological Diversity ("CBD") Petition to Establish National Pollution Limits for Greenhouse Gases pursuant to Clean Air Act (Dec. 2, 2009).
  - EPA (under Trump Administration) Denial dated January 19, 2021
  - EPA (under Biden Administration) Withdrawal of Denial dated March 4, 2021
  - CBD notice of Intent to Sue for Unreasonable Delay in Responding dated October 30, 2023
  - Potential regulatory consequences?
    - Attainment/nonattainment
    - Permitting

## **CAA Standard Setting**

#### Standards of Performance

- Section 111(b): Standards of performance for new, modified and reconstructed sources (NSPS)
  - Federal standards that "reflect the degree of emission limitation achievable through the application of the best system of emission reduction which (taking into account the cost of achieving such reduction and any non-air quality health and environmental impact and energy requirements) the Administrator determines has been adequately demonstrated."
- Section 111(d): Standards of performance for existing sources (ESPS)
  - Federal emission guidelines reflecting the "best system of emission reduction . . . "

#### Hazardous Air Pollutants (HAPs)

- Section 112(d) National Emission Standards for HAPs (NESHAPs) (1970)
  - "Risk-based" standards set at level at the level that provides an ample margin of safety to protect public health from HAPs
- Section 112(d) Maximum Achievable Control Technology (MACT) (1990)
  - Initial "technology-based" standards that reflect the maximum degree of reduction in emissions (including a prohibition on such emissions, where achievable) that EPA, taking into consideration the cost of achieving such emission reduction, and any non-air quality health and environmental impacts and energy requirements, determines is achievable.
  - Followed by "risk-based" standards to determine whether the MACT standards are adequate to protect public health with an ample margin of safety, and protect against adverse environmental effects (residual risk standards)

## **State Implementation Plans (SIPs)**

- Blueprint for attaining and maintaining NAAQS in each air quality control region (AQCR) - Section 110
- Cooperative federalism: states develop to meet minimum requirements for EPA review and approval
- "Attainment" SIPs = Infrastructure SIPs
  - Emissions limits and control measures, ambient air quality monitoring, enforcement of permitting programs, adequate personnel and funding, adequate authorities, stationary source monitoring, consultations, public notices, PSD and visibility protection, etc.
- "Nonattainment" SIPs = Attainment Demonstration SIP
  - CAA Part D, Subparts 1-5
  - Path to attain and maintain the NAAQS, to include emissions limits and control measures, emissions inventories, RACT, nonattainment new source review
- Redesignation SIP = Maintenance SIP

## **PSD Permits**

- Preconstruction permit for any criteria pollutant in an attainment area for that pollutant
- New "major sources," and "major modifications" of existing sources, on a pollutant by pollutant basis
  - Defined PSD thresholds for federally-regulated NSR pollutants
  - Special rules for GHGs following *Utility Air Regulatory Group v. EPA*, 134 S. Ct. 2427 (2014) (allowing EPA to require PSD BACT for GHGs emitted in significant amounts by PSD major sources/modifications)
  - Constant theme NSR too complicated and requires reform
- Twin pillars:
  - Best Available Control Technology (BACT)
    - "An emission limitation based on the **maximum** degree of reduction of each pollutant subject to
      regulation under this Act emitted from or which results from any major emitting facility, which the
      permitting authority, on a case-by-case basis, taking into account energy, environmental, and
      economic impacts and other costs, determines is **achievable** for such facility through application of
      production processes and available methods, systems, and techniques, including fuel cleaning or
      treatment or innovative fuel combustion techniques for control of each such pollutant."
  - Air Quality Analysis
    - Demonstration that modeled impacts will not cause or contribute to a NAAQS or PSD increment violation; additional impacts analysis; and Class I area analysis
- Public Participation

## **Nonattainment Permits**

- Preconstruction permit for any criteria pollutant in a nonattainment area for that pollutant
- New "major sources," and "major modifications" of existing sources, on a pollutant by pollutant basis
  - Defined NNSR thresholds more stringent as air quality worsens
- Heightened control technology review Lowest Achievable Emissions Rate (LAER)
  - "The most stringent emissions limitation which is contained in the implementation plan of any State for such class or category of stationary source, unless the owner or operator of the proposed stationary source demonstrates that such limitations are not achievable; or (B) The most stringent emissions limitation which is achieved in practice by such class or category of stationary sources. This limitation, when applied to a modification, means the lowest achievable emissions rate for the new or modified emissions units within (the) stationary source. In no event shall the application of the term permit a proposed new or modified stationary source to emit any pollutant in excess of the amount allowable under an applicable new source standard of performance."
- Emissions offsets in lieu of air quality analysis
  - Scarcity of offsets
- Alternatives analysis; compliance plan; public participation

## **Clean Air Act - Enforcement**

- Section 113 of the CAA provides for the following:
  - Civil administrative actions non-judicial enforcement actions taken by EPA without involving a judicial court process
    - Notices of violation
    - Administrative orders (with or without penalties)
    - Penalties up to \$57,617/day (with inflation 2024)
  - Civil judicial actions formal lawsuits against persons or entities that have failed to comply with statutory or regulatory requirements or an administrative order
    - Filed by the U.S. Department of Justice on behalf of EPA
    - Penalties up to \$121,275/day (with inflation 2024)
    - Injunctive relief
    - 5-year statute of limitations
  - Criminal actions
    - Usually reserved for the most serious violations those that are willful, or knowingly committed
    - Court conviction can result in fines or imprisonment up to 5 years for the first offense
    - Defendant also may be ordered to pay restitution to anyone affected by the violation

## Clean Air Act - Enforcement, cont'd

#### Citizen suits

- Section 304(a)(1) of the CAA authorizes any person to enforce compliance with emission standards or limitations and orders issued by EPA or a state
  - Can sue the violator, EPA and/or the state
  - Standing must be personally affected
  - Must give 60-day notice of intent to sue
  - · Suit may not be commenced if EPA or the state is already diligently prosecuting
- In a citizen suit, the court may grant an injunction, impose penalties, and award attorneys' fees and litigation costs to a prevailing party when the court determines it is appropriate
  - Sierra Club v. Energy Future Holdings Corp., No. 12-108 (W.D. Tex. Mar. 28, 2014)

# **Title V Operating Permits Program**

- CAA requires states to implement operating permits programs
- Generally post-construction vs. preconstruction
- Single source-specific permit that identifies all "applicable requirements" in federally enforceable document
- Required of "major sources"
  - Default for criteria pollutants is 100 tons per year (TPY) and for HAPs is 10 TPY for a single HAP or 25 TPY for all HAPs
  - Lower thresholds in nonattainment areas
- Five-year term
- EPA review and petition process
  - Final rule revising petition process, 85 Fed. Reg. 6,431 (Feb. 5, 2020)
  - Proposed rule updating rules when "applicable requirements" established in permitting programs can be reviewed, modified, and/or implemented through the Title V operating permit program, 89 Fed. Reg. 1150 (Jan. 9, 2024)

# Title V Operating Permit Program, cont'd

- Elements of a Title V Operating Permit
  - Applicable requirements
  - Supplemental monitoring
  - Permit shield
  - Compliance schedule
- Compliance demonstration requirements
  - Deviation reporting
  - Annual compliance certification
  - Responsible official's certification of truth, accuracy and completeness

## **Hot Issues**

- Regulation of Greenhouse Gas Emissions from Power Plants
- Interstate Air Pollution Transport
- Regional Haze Program

## **Greenhouse Gases from Power Plants**

- 2015 Clean Power Plan ("CPP") Rule
  - Section 111(b): Standards of performance for new, modified and reconstructed sources (NSPS)
    - Federal standards that "reflect the degree of emission limitation achievable through the application of the best system of emission reduction which (taking into account the cost of achieving such reduction and any non-air quality health and environmental impact and energy requirements) the Administrator determines has been adequately demonstrated."
  - Section 111(d): Standards of performance for existing sources (ESPS)
    - Federal emission guidelines for states to implement reflecting the "best system of emission reduction"
  - West Virginia, et al. v. EPA, No. 15A-773 (S. Ct. Feb. 9, 2016)
    - U.S. Supreme Court issued stay pending resolution of challenges in the D.C. Circuit; D.C. Circuit abated proceedings pending proposed repeal of CPP.
- 2019 Affordable Clean Energy ("ACE") Rule and CPP Repeal
  - Repeals CPP with narrower view of Section 111(d)
  - American Lung Ass'n, et al. v. EPA, No. 19-1140 (D.C. Cir. Jan. 19, 2021) (vacated ACE Rule and CPP Repeal)
- West Virginia, et al. v. EPA (S. Ct. June 30, 2022)
  - Major Questions Doctrine (EPA lacks "clear congressional authorization" to implement CPP beyond the fence approaches)
- April 24, 2024 Final Rule
  - Emission guidelines for large sources that require carbon capture and sequestration (CCS) (or hydrogen as fuel)

# **Interstate Air Pollution Transport**

- CAA "Good Neighbor" Provision Section 110(a)(2)(D)(i)(l)
  - Each state in its SIP must prohibit emissions that will significantly contribute to nonattainment of a NAAQS, or interfere with maintenance of a NAAQS, in a downwind state
  - SO<sub>2</sub> and NO<sub>x</sub> can react in the atmosphere to form fine particulate while NO<sub>x</sub> can react in the atmosphere to create ozone. These pollutants travel great distances and the transport of these pollutants across state borders, referred to as interstate air pollution transport, makes it difficult for downwind states to meet health-based air quality standards for PM<sub>2.5</sub> and ozone
- Multiple Programs
  - NO<sub>x</sub> Budget Trading Program (2003 2008)
  - Clean Air Interstate Rule (2009 2014)
  - Cross-State Air Pollution Rule (CSAPR) (2015 present)
  - CSAPR Update (2017 present)
  - Revised CSAPR Update (2020 present)
  - "Good Neighbor Plan" (2023 present)
    - EPA Final SIP Disapproval (21 states -19 disapprovals, 2 partial disapprovals) (Feb. 13, 2023)
    - EPA Final Federal Implementation Plan released (23 states) (March 15, 2023)

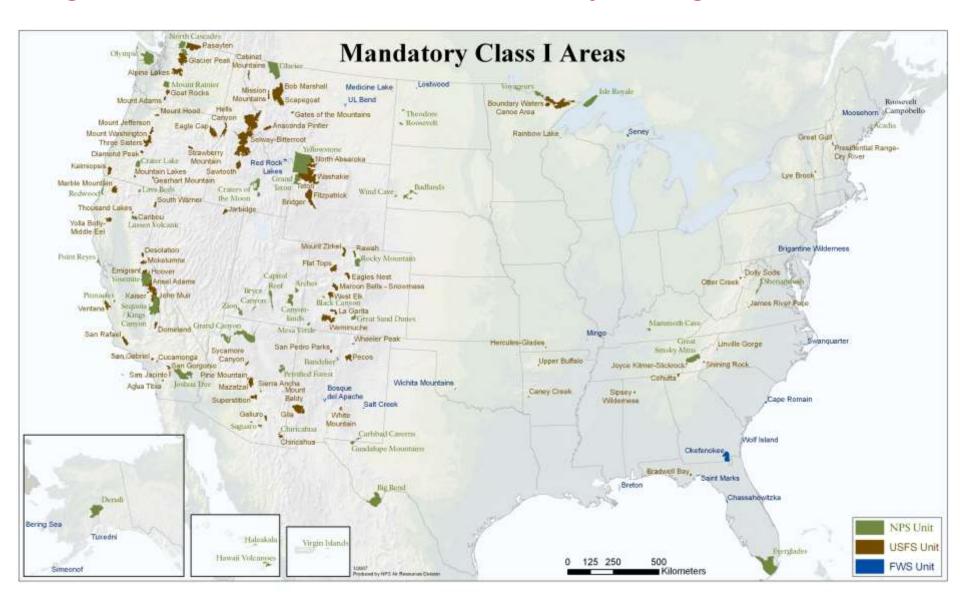
# Interstate Air Pollution transport, cont'd

- Courts have granted stays for SIP Disapprovals for 12 states:
  - West Virginia, Texas, Mississippi, Louisiana, Kentucky, Arkansas, Missouri, Minnesota, Nevada, Utah, Oklahoma, and Alabama.
- Based on these stays, EPA issued an Interim Final Rule staying the effectiveness of the Good Neighbor FIP as to these 12 states; See 88 Fed. Reg. 49,295 (Aug. 4, 2023); 88 Fed. Reg. 67,102 (Sep. 29, 2023)
- On April 4, 2024, EPA released a notice of partial denials of four petitions for reconsideration and requests for administrative stay of the 2015 Good Neighbor FIP (See 89 Fed. Reg. 23,526 (April 4, 2024)
- EPA rejected arguments that the issuance of judicial stay orders in ongoing challenges to underlying interstate transport State Implementation Plan ("SIP") disapprovals, which stayed the Good Neighbor FIP requirements for 12 states, required EPA to reconsider the FIP in its entirety

## **Regional Haze Program**

- Sections 169A and B require EPA to adopt rules and states to submit SIPs to reduce visibility impairment resulting "from man-made air pollution," known as regional haze, in 156 mandatory Class I federal areas (Class I areas)
- Goal is to achieve "natural visibility conditions" by 2064, to be accomplished through a series of 10-year implementation periods
- First period ends in 2018; second period ends in 2028
- Regional haze SIPs due July 2021
- Key elements:
  - Best Available Retrofit Technology (BART) for sources that are "BART-eligible" and "subject to BART"
  - Reasonable further progress towards visibility goal
- Federal and state determinations frequently litigated

## Regional Haze: 156 Class I Areas Protected by the Regional Haze Rule



## **Questions?**

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