

REINHOLD ENVIRONMENTAL[®]



2023 Reinhold/PCUG Round Table Presentation

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Good Neighbor Plan “CSAPR Update” “Ozone Federal Implementation Plan (FIP)”

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Outline

Overview

Units impacted

Major Components

- Expanding Group 3 program
- Daily Backstop Limit
- Preset/Dynamic Budget
- Bank Recalibration
- Assurance Level/Secondary Backstop Limit

Additional Considerations

- EPA Projections
- Historical Trends

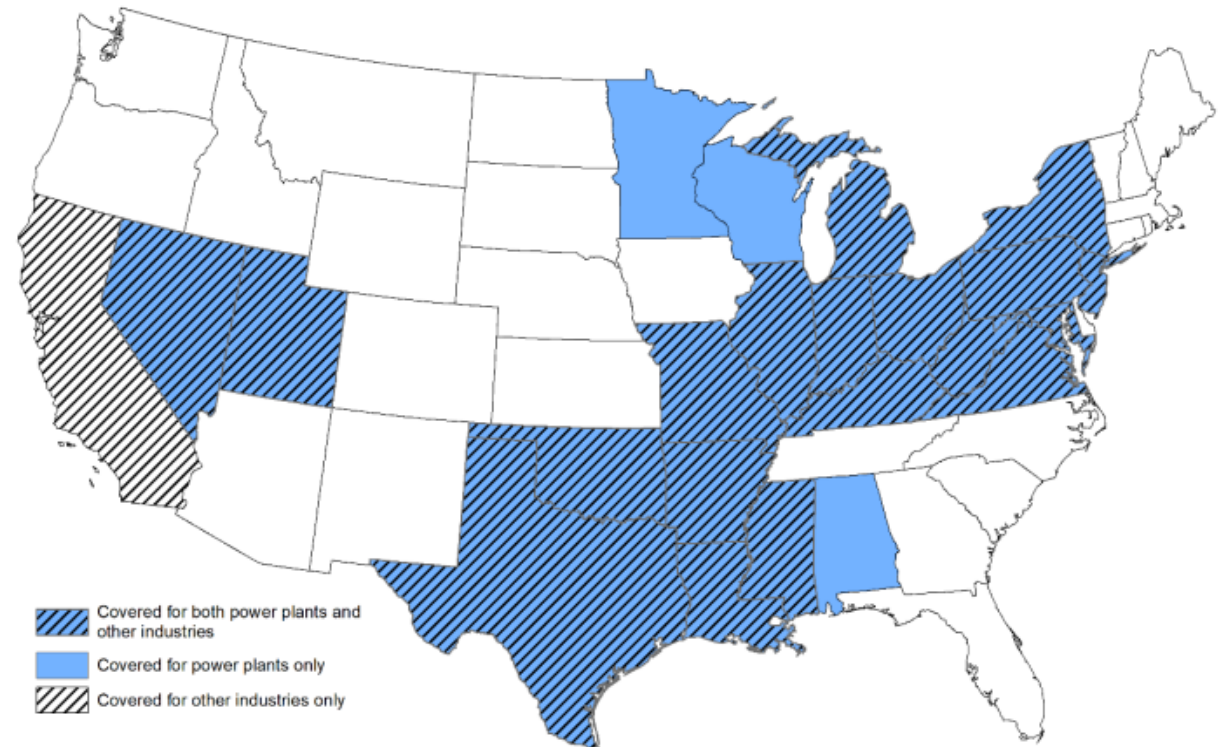
Overview

- EPA Issued a “Good Neighbor Plan” to reduce NOx emissions at powerplants and industrial facilities
- Impacts 23 states, EGUs, and Non-EGUs
 - EGUs: Expansion of current NOx ozone season cap and trade program
 - Non-EGUs: enforceable NOx Emission Control Requirements
- Objective – Reduce NOx emissions resulting in cleaner air and lives saved

States Impacted*

Alabama	Arkansas
Illinois	Indiana
Kentucky	Louisiana
Maryland	Michigan
Minnesota	Missouri
Mississippi	Nevada
New Jersey	New York
Ohio	Oklahoma
Pennsylvania	Texas
Utah	Virginia
West Virginia	Wisconsin
California	

Map of States Covered by the Final Good Neighbor Plan



Stays Granted

- States granted a “Stay” are going through the court of appeals and do not need to comply with the rule until the appeals process is finished
- Stays were granted in Texas, Louisiana, Mississippi, Arkansas, Missouri, so far



Non-EGU Emission Sources

Starting 2026 Ozone season, there will be enforceable NO_x emission control requirements for the following point sources:

- Reciprocating internal combustion engines in Pipeline Transportation of Natural Gas
- Kilns in Cement and Cement Product Manufacturing
- Reheat furnaces in Iron and Steel Mills and Ferroalloy Manufacturing
- Furnaces in Glass and Glass Product Manufacturing
- Boilers: Iron and Steel Mills and Ferroalloy Manufacturing, Metal Ore Mining, Basic Chemical Manufacturing, Petroleum and Coal Products Manufacturing, and Pulp, Paper, and Paperboard Mills
- Solid Waste Combustors or Incinerators

Major Components for EGUs

Expanding
Group 3
program

Daily Backstop
Limit

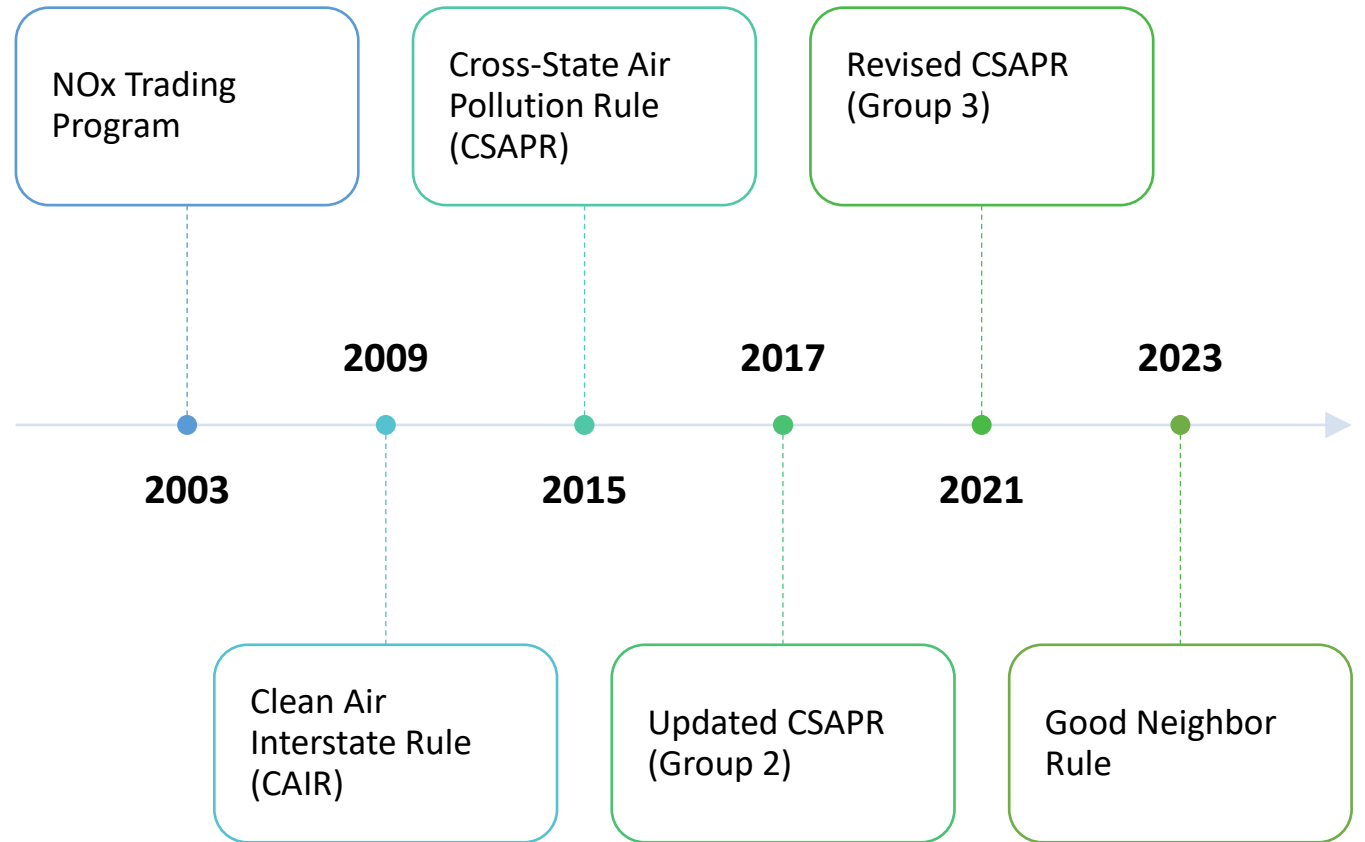
Preset/Dynamic
Budget

Bank
Recalibration

Assurance
Level/Secondary
Backstop Limit

Expanding Group 3 Program

History



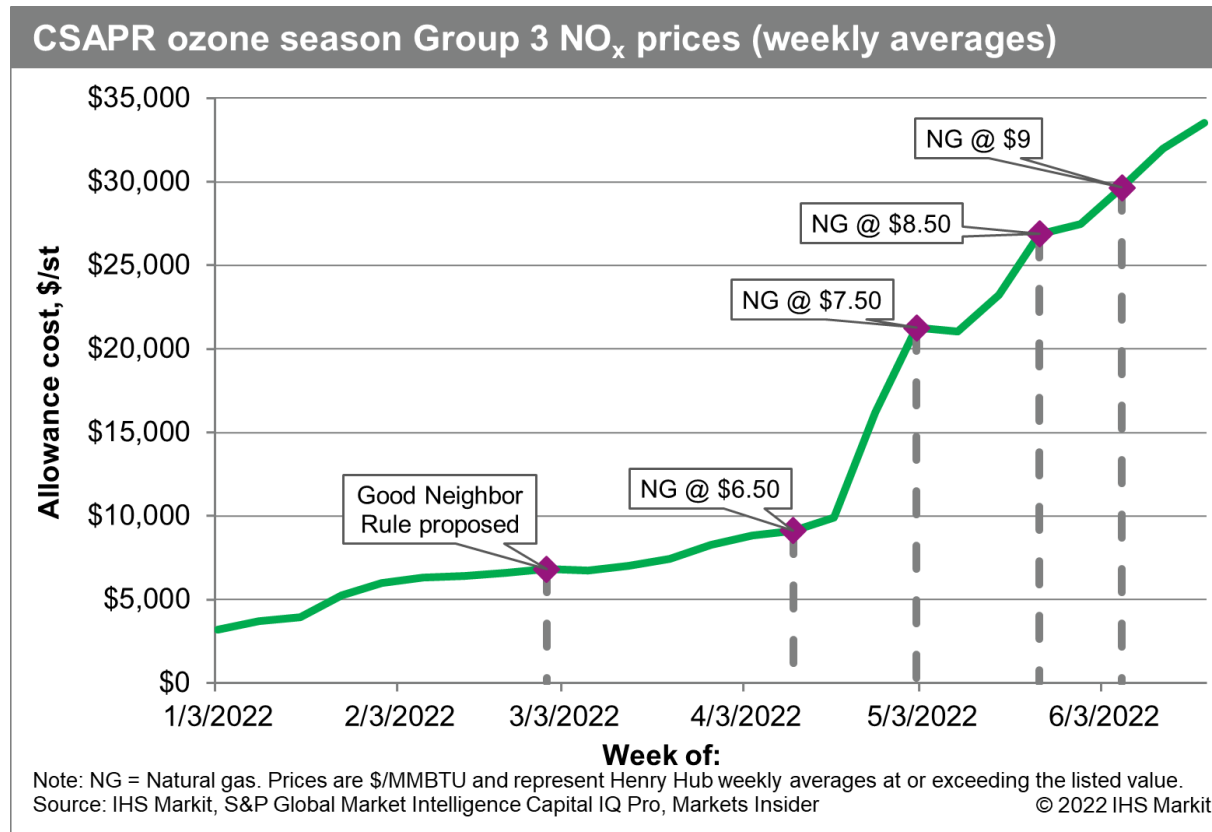
CSAPR – Cap and Trade Structure

- Units are provided with a set # of annual allowances that can then be traded/bought/sold
- 1:1 allowance surrender per ton of NO_x emitted during the ozone season (additional penalties for operating over the Daily Backstop limit)
- Budget decreases overtime



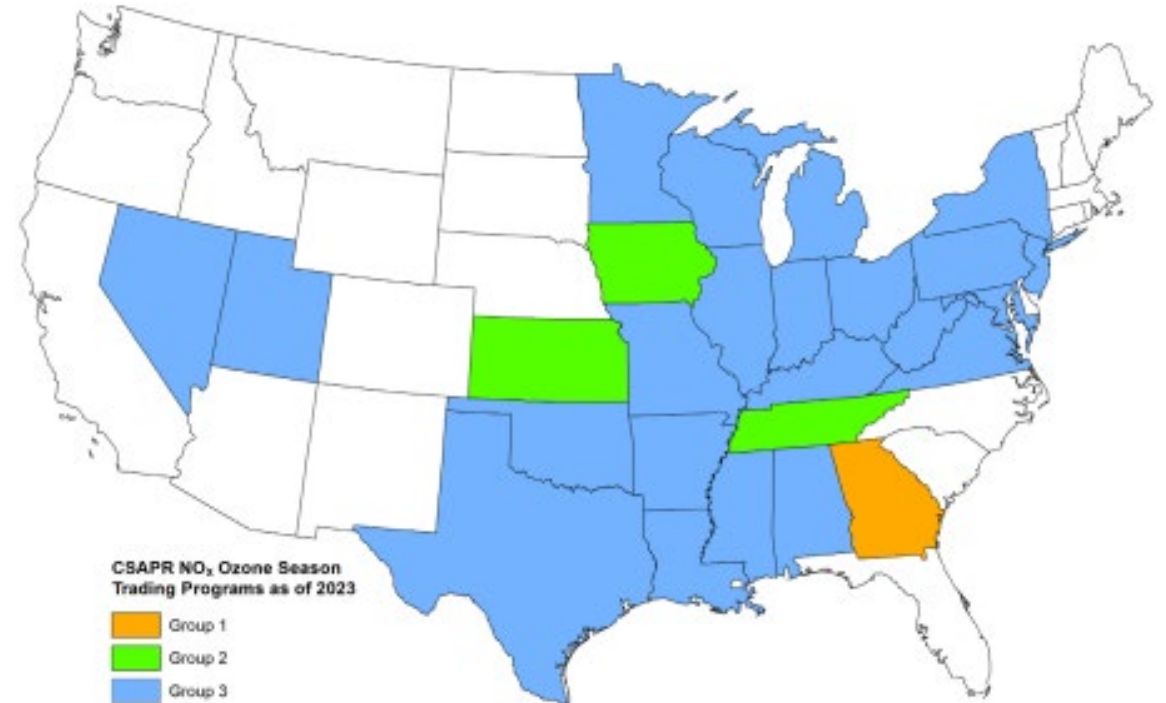
Allowance Value

- Price peaked around \$41,000 /ton
- Price currently about \$10,000 /ton



Trading Program Map

- Sources to stay in Group 3
 - IL, IN, KY, LA, MD, MI, NJ, NY, OH, PA, VA, WV
- Sources in Group 2 to transition to Group 3
 - AL, AR, MS, MO, OK, TX, WI
- Sources newly covered by CSAPR Ozone Program
 - MN, NV, UT
- Sources to remain in Group 2
 - IA, KS, TN



Daily Backstop Limit



Daily Backstop Limit

- Impacts Coal units with a capacity over 100 MW without a fluidized bed reactor
- Daily average emission limit of 0.14 lb NO_x/mmBtu
- Each ton exceeding this limit, after the first 50 tons over, will incur a 3:1 allowance surrender penalty in place of the 1:1 surrender
- No exceptions during startups/shutdowns



Daily Backstop Limit

- When it goes into effect
 - Coal units with an installed SCR: 2024
 - Coal units that install an SCR before 2030: One year after installation
 - Coal units without an SCR: 2030

Preset/Dynamic
Budget

Preset vs Dynamic Budget

- Budgets calculated using emission rates and heat input
- **Preset Budget**
 - Calculated using 2021 data
 - Already determined and published
- **Dynamic Budget**
 - Calculated using data over 5 previous years
 - Published approx. 1 year in advance (e.g., 2030 budget will be set in 2029)

Preset vs Dynamic Budget

- Overall decrease in budget
- Timeline
 - **2023-2025:** Preset budget
 - **2026-2029:** Preset budget released as floor; EPA will increase if dynamic budget is calculated to be higher
 - **2030+:** Dynamic budget



State	Final Emissions Budgets for 2023	Final Emissions Budgets for 2024	Final Emissions Budgets for 2025	Preset Emissions Budgets for 2026	Preset Emissions Budgets for 2027	Preset Emissions Budgets for 2028	Preset Emissions Budgets for 2029
Alabama	6,379	6,489	6,489	6,339	6,236	6,236	5,105
Arkansas	8,927	8,927	8,927	6,365	4,031	4,031	3,582
Illinois	7,474	7,325	7,325	5,889	5,363	4,555	4,050
Indiana	12,440	11,413	11,413	8,410	8,135	7,280	5,808
Kentucky	13,601	12,999	12,472	10,190	7,908	7,837	7,392
Louisiana	9,363	9,363	9,107	6,370	3,792	3,792	3,639
Maryland	1,206	1,206	1,206	842	842	842	842
Michigan	10,727	10,275	10,275	6,743	5,691	5,691	4,656
Minnesota	5,504	4,058	4,058	4,058	2,905	2,905	2,578
Total	208,119	198,014	195,259	151,329	119,663	115,193	105,201

Bank Recalibration

Annual Bank Recalibration

- If the program's bank of allowances is greater than the target bank, recalibration occurs
- Target bank = Programs annual budget x Target %
- Target %
 - 2024-2029: 21%
 - 2030+: 10.5%
- Allowances in excess will be deducted by a ratio of
 - target bank ÷ total bank
- Takes place approx. Aug 1 of the years control period



Assurance Level &

Secondary Backstop Limit



Assurance Level

- Triggered if states emissions limit is above the assurance level
- Assurance level is the higher of the two:
 - 121% of the states budget
 - % greater the actual Heat Input is over the Heat Input used to calculate state budget

Assurance Level

- If triggered
 - EPA will apportion responsibility for exceedance to responsible units
 - Responsible units must surrender two additional allowances per ton apportioned to them
 - Secondary backstop limit could be applicable
- Triggered three times since 2021
 - 2019: Mississippi (CSAPR Ozone NOx)
 - 2020: Mississippi (CSAPR Ozone NOx)
 - 2020: Missouri (CSAPR Ozone NOx)

Secondary Backstop Limit

- If a states assurance level is exceeded, a secondary (more restrictive) limit will be placed on responsible units that
 - Have pollution control equipment
 - Operated > 367 hours over the last control period
 - Operated > 367 hours for another NOx Ozone control period
- Units with secondary limit that violate it would be subject to potential enforcement as a violation of the Clean Air Act

Additional Considerations

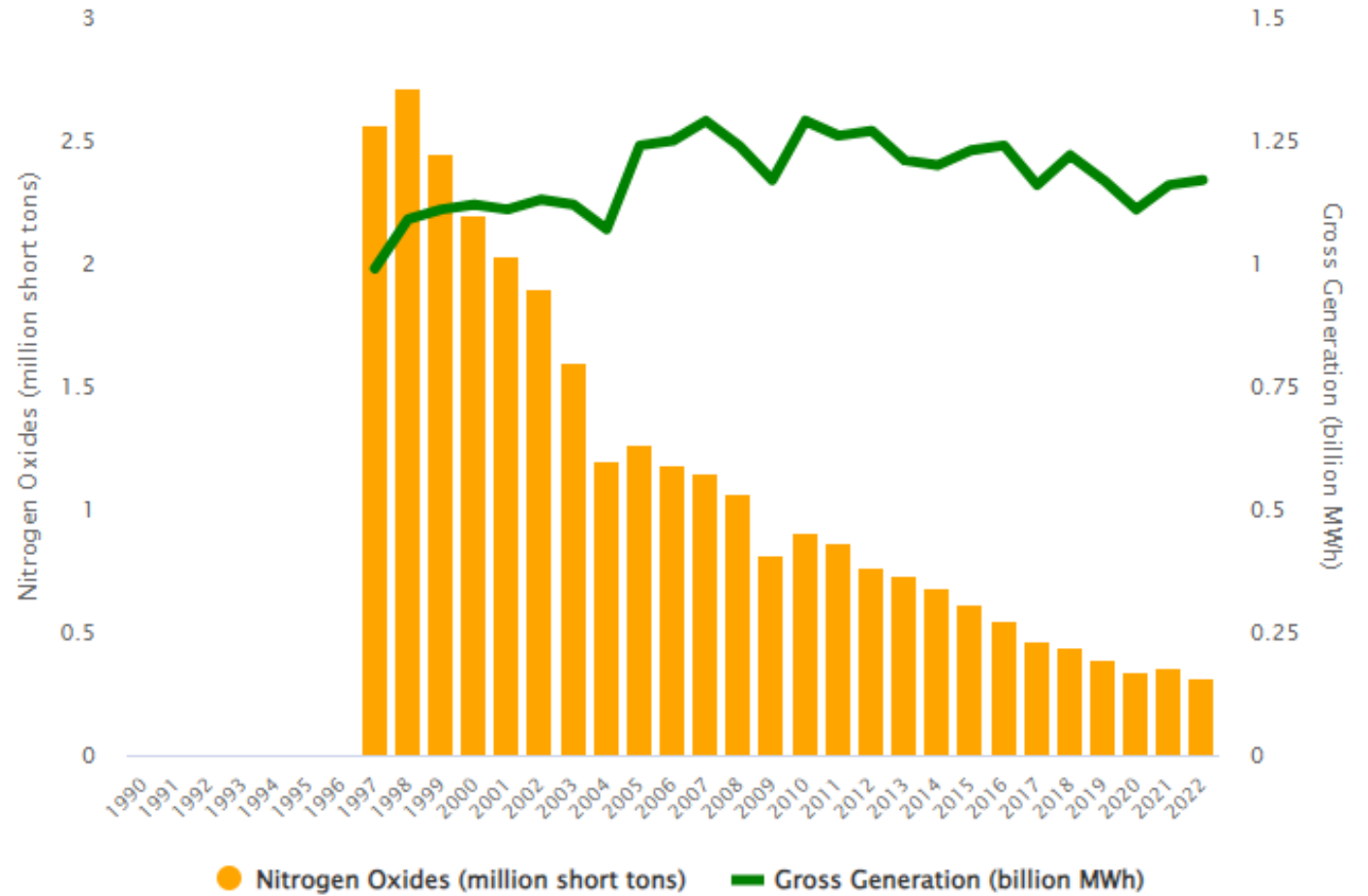
EPA Projections

- Reduce pollutants
- Improve Air Quality in downwind communities
- Impact in 2026
 - 70,000 NO_x Tons reduction
 - 29,000 SO₂ ton reduction
 - Prevent 1,300 premature deaths
 - \$3.7-\$14 billion net benefit*



Historical Ozone Emissions

Ozone Season Nitrogen Oxides Emissions, 1997-2022





Questions?

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