



Good Neighbor Plan

Focus on Non-EGU Boiler Requirements

Presented to:

Council of Industrial Boiler Owners

Virtual Key Issue Topic Session
August 1, 2023



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The business of sustainability



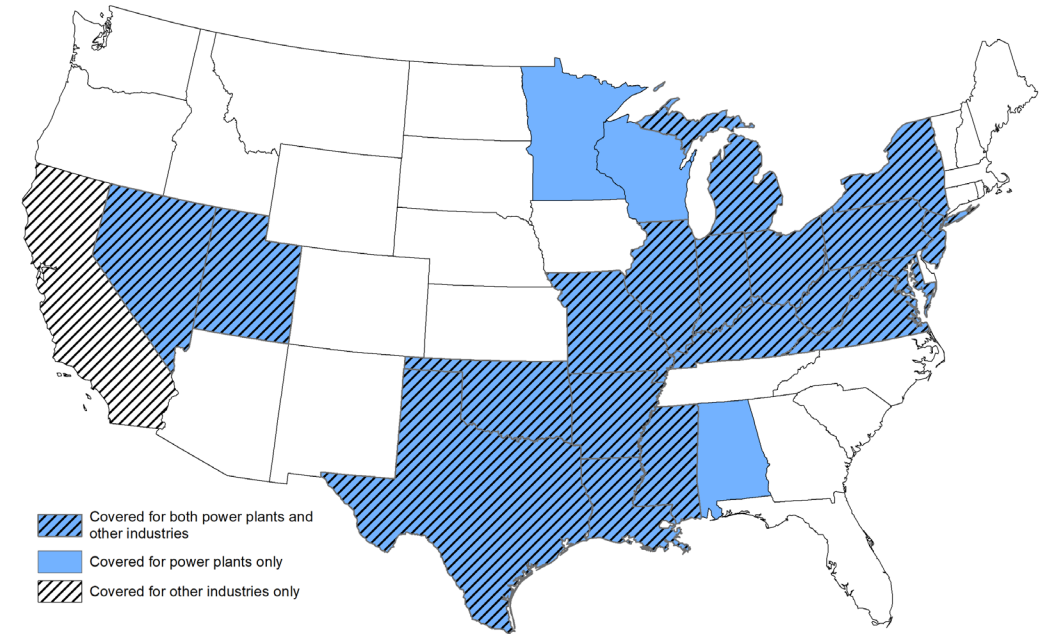
Outline

- Background on the Good Neighbor Plan (GNP)
- Legal Delays
- Industrial Sources and Industry Categories Targeted
- Compliance Dates
- Applicability
- Emission Limits
- Testing and Monitoring Requirements
- Additional Requirements
- Recommended Assumptions and Actions



Background – Good Neighbor Plan

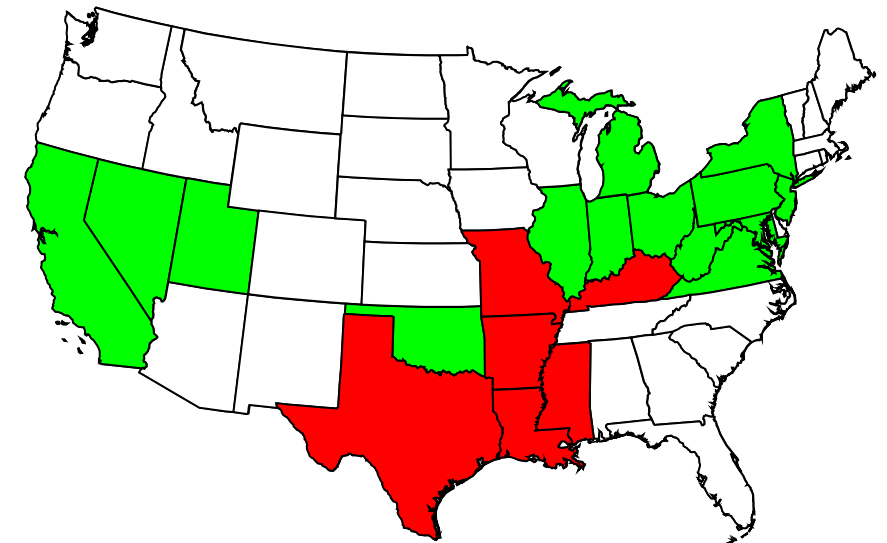
- EPA's "Good Neighbor Plan" to attain the 2015 ozone NAAQS was promulgated [June 5, 2023](#)
- Effective August 4, 2023 (delayed in some states)
- Combination of approaches to reduce upwind NO_x emissions to eliminate significant contributions to nonattainment, or interference with maintenance, of the 2015 ozone NAAQS in downwind states.
 - NO_x allowance trading program for electric generating units (EGUs) in 22 states
 - NO_x emissions standards for nine large industries in 20 states
- Focus is NO_x only, and applies only during ozone season (May 1 through September 30)
- The rule package is a series of Federal Implementation Plans (FIPs)



Source: <https://www.epa.gov/csapri/good-neighbor-plan-2015-ozone-naaqs>

“Messy Litigation”

- CAA requires states to submit “good neighbor” or “interstate transport” State Implementation Plans (SIPs).
- On February 13, 2023, EPA disapproved good neighbor SIPs submitted by 21 states (SIP Disapproval Action)
 - CAA prerequisite for EPA to issue FIPs
- States and other organizations filed suit against SIP Disapproval Action
- Result: EPA staying GNP in Arkansas, Kentucky, Louisiana, Mississippi, Missouri, Texas effective August 4, 2023
 - EPA Interim Final Rule to Stay GNP (July 31, 2023, [Federal Register](#))
 - Recently stayed in Minnesota and Nevada
- 16 separate lawsuits filed against GNP Itself (and counting)

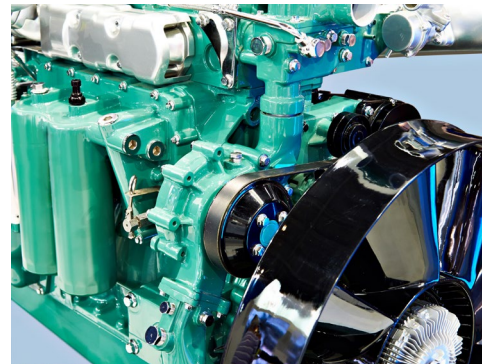


- - GNP effective for industrial sources 8/4/2023
- - GNP stayed 8/4/2023 (EGUs & industrial sources)

Industrial Sources and Industries Targeted by Good Neighbor Plan



Boilers in Iron and Steel Mills and Ferroalloy Manufacturing, Metal Ore Mining, Basic Chemical Manufacturing, Petroleum and Coal Products Manufacturing, and Pulp, Paper, and Paperboard Mills



Reciprocating internal combustion engines (RICE) in Pipeline Transportation of Natural Gas



Kilns in Cement and Cement Product Manufacturing



Reheat furnaces in Iron and Steel Mills and Ferroalloy Manufacturing



Combustors and incinerators in Solid Waste Combustors and Incinerators



Furnaces in Glass and Glass Product Manufacturing

Compliance Dates

2026

- Compliance due May 1, 2026
- Ozone season only (May 1 through September 30)
- Begins 2026 ozone season and then future ozone seasons

JANUARY

MON	TUE	WED	THU	FRI	SAT	SUN
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SEPTEMBER

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OCTOBER

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NOVEMBER

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DECEMBER

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Applicability [40 CFR §52.45(b)]

- Requirements found in new sections of 40 CFR Part 52
 - §52.40(all industrial source types); §52.45 (boiler-specific)
- *Boiler* means an enclosed device using controlled flame combustion and having the primary purpose of recovering thermal energy in the form of steam or hot water. Controlled flame combustion refers to a steady-state, or near steady-state, process wherein fuel and/or oxidizer feed rates are controlled.
- Existing unit: construction commenced before August 4, 2023
- New unit: construction commenced on or after August 4, 2023
- [EPA spreadsheet](#) lists potentially affected sources and assesses required controls

Applicability [40 CFR §52.45(b)] (Cont.)

- Each new or existing boiler is subject if:
 - Located in one of the 20 States (stayed 8/4 in 6 States)
 - Located at a facility that is within one of five (5) industrial sectors
 - Design capacity \geq 100 MMBtu/hr
 - Receives \geq 90% of heat input from coal, residual oil, distillate oil, natural gas, or combinations of these fuels
- Low-use exemption

Industry	NAICS Code
Basic Chemical Manufacturing	3251xx
Petroleum and Coal Products Manufacturing	3241xx
Pulp, Paper, and Paperboard Mills	3221xx
Iron and Steel and Ferroalloys Manufacturing	3311xx
Metal Ore Mining	2122xx

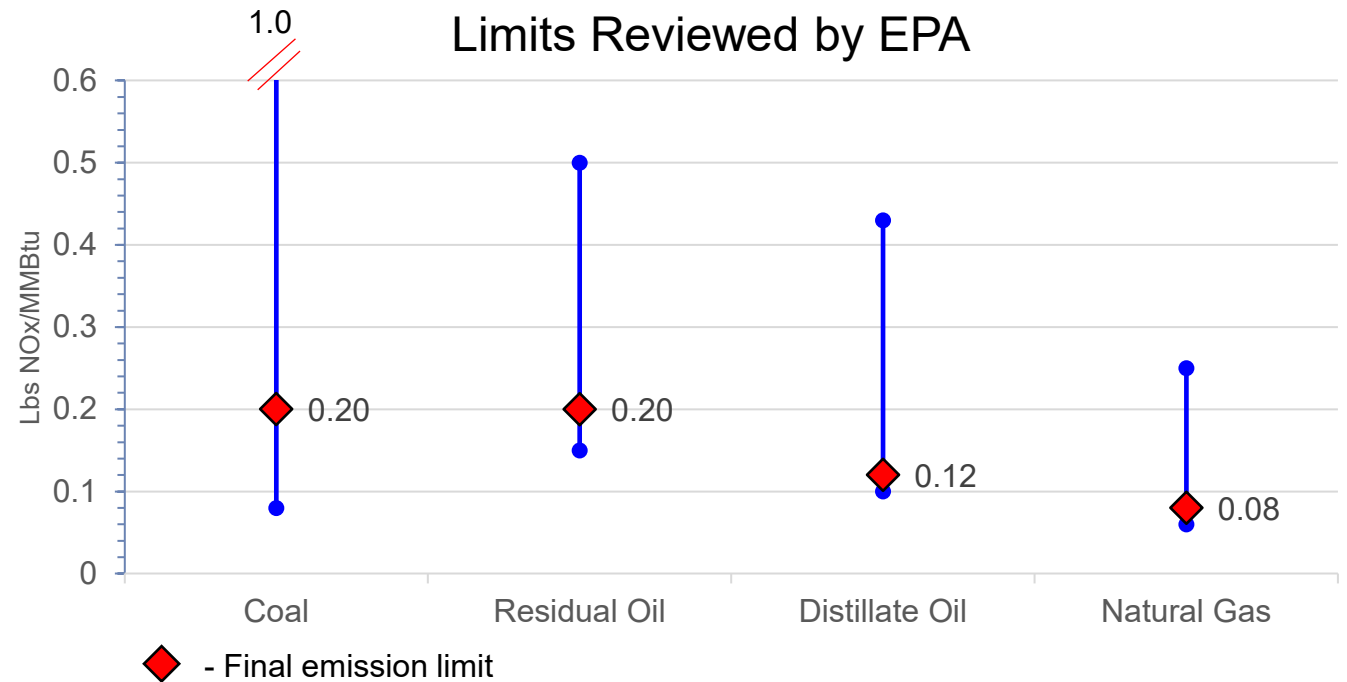
Low-Use Exemption

- Exempt from emission limits; Only subject to recordkeeping and reporting if:
 - Operates <10% per year over 3 most recent years of use; and ≤ 20% in any one of the 3 years (both on hours of operation basis)
- If boiler exceeds the 10% per year over the 3 years, or exceeds the 20% hours per single year criteria you must:
 - Meet the applicable emissions limits and other applicable provisions as soon as possible, but not later than 1 year from the date eligibility as a low-use boiler was negated by exceedance of the low-use boiler criteria



Emission Limitations [40 CFR §52.45(c)]

Fuel	Ibs NOx/MMBtu (30-day rolling average)
Coal	0.20
Residual Oil	0.20
Distillate Oil	0.12
Natural Gas	0.08
Combinations of Above Fuels	Prorated based on NOx emissions contributed by each fuel



EPA assumes SCR for all fuels, except natural gas with LNB and FGR.

Source: Table 6B, Final Non-EGU Sectors TSD, March 2023, https://www.epa.gov/system/files/documents/2023-03/Final_Non-EGU_Sectors_TSD.pdf

Testing and Monitoring [40 CFR §52.45(d)]

- Initial compliance test (**all affected units**)
 - Using Method 7E (continuous instrumental analyzer)
 - Within 90 days from the installation of the pollution control equipment but no later than May 1, 2026
 - Monitor NO_x emissions from the affected unit for 30 successive operating days
 - No initial compliance test if affected unit is subject to a pre-existing, federally enforceable requirement to monitor its NO_x emissions using a CEMS (40 CFR §60.13 or 40 CFR Part 75)



Testing and Monitoring [40 CFR §52.45(d)] (Cont.)

- **Affected units \geq 250 MMBtu/hr heat input capacity**
 - CEMS for NO_x and, O₂ or CO₂
 - Continuous basis using a 30-day rolling average emissions rate
 - Can delay installing a NO_x CEMS until after the initial performance test has been conducted
 - If NO_x emission < 70% of the emissions limit, you are not required to install a CEMS for measuring NO_x
 - Submit request to EPA documenting the initial performance test results and includes an alternative monitoring procedure.
 - If request rejected, You have one year to install CEMS



Testing and Monitoring [40 CFR §52.45(d)] (Cont.)

- **Affected units < 250 MMBtu/hr** heat input capacity
 - Use CEMs or annual performance test w/ monitoring plan
 - Annual performance test must be conducted before the affected units operates more than 400 hours in a given year.
 - Develop monitoring plan that relates the operational parameters to emissions of the affected unit
 - Submit monitoring plan to the EPA via the CEDRI reporting system, and request that permitting authority incorporate the monitoring plan into the facility's Title V permit.
 - Testing and monitoring (and recordkeeping & reporting) only apply during the ozone season

Additional Requirements [40 CFR §52.40]

- Compliance extension requests
 - Initial extension to May 1, 2027. Request must include demonstration of necessity.
 - Second extension to May 1, 2029. Requires updated demonstration of necessity.
 - Requirements for extension request at 40 CFR §50.40(d)(3)
 - Request made to EPA in writing no later than 180 days before compliance date
 - If granted, conditions of extension will be added to Title V permit

Additional Requirements [40 CFR §52.40] (Cont.)

- Request for case-by-case emission limits
 - Request must be submitted by August 5, 2024 (EPA recommends sooner)
 - Completeness determination within 60 days after original request (or after receipt of supplementary information)
 - Decision by EPA within 60 days of EPA's completeness determination
 - EPA to establish an appropriate alternative case-by- case emissions limit for the affected unit.
 - For existing units that cannot comply due to “technical impossibility” or “extreme economic hardship”
 - Title V revised to incorporate case-by-case limits



Case-By-Case Requests

- Demonstration of technical impossibility
 - Uncontrolled NOx emissions
 - A third-party engineering assessment demonstrating that the affected unit cannot meet the applicable emissions limit with available control technology
- Demonstration of extreme economic hardship
 - At least three vendor estimates of the costs of installing control technology necessary to meet the applicable emissions limit.
 - An analysis of available control technology options and a proposed case-by-case emissions limit that represents the lowest emissions limitation technically achievable
 - May propose additional measures to reduce NOx emissions, such as operational standards or work practice standards
 - EPA will compare extreme economic hardship requests to highest \$/ton costs used to develop rule



Estimated Boiler Average Cost/Ton (2016\$)

Industry	Average Cost/Ton Values (2016\$)
Basic Chemical Manufacturing	11,845
Petroleum and Coal Products Manufacturing	14,582
Pulp, Paper, and Paperboard Mills	14,134
Iron and Steel and Ferroalloys Manufacturing	8,369
Metal Ore Mining	14,595

Source: Table 6, Technical Memorandum, Summary of Final Rule Applicability Criteria and Emissions Limits for Non-EGU Emissions Units, Assumed Control Technologies for Meeting the Final Emissions Limits, and Estimated Emissions Units, Emissions Reductions, and Costs, March 15, 2023, [https://www.epa.gov/system/files/documents/2023-03/Memo to Docket Non-EGU Applicability Requirements and Estimate Emissions Reductions and Costs Final.pdf](https://www.epa.gov/system/files/documents/2023-03/Memo%20to%20Docket%20Non-EGU%20Applicability%20Requirements%20and%20Estimate%20Emissions%20Reductions%20and%20Costs%20Final.pdf)

Recommended Assumptions and Actions

- Assume: Compliance is due by May 1, 2026
- Conduct applicability assessment (location, industry segment, boiler capacity, existing NOx limits)
- Assess hours/year operation over 2020 – 2022 period (low-use exemption)
 - Effect of pandemic
- Assess NOx reductions needed for units not meeting limits



Recommended Assumptions and Actions (Cont.)

- Develop a preliminary compliance plan including:
 - A least-cost control strategy
 - Identification of applicable control options *
 - Fuel switch
 - SCR
 - SNCR
 - LNB & OFA
 - LNB & FGR
 - Oxygen Trim & Water Injection
 - Determination if extension may be required
 - Identify required monitoring/testing and recordkeeping

* - EPA Menu of Control Measures, <https://www.regulations.gov/document/EPA-HQ-OAR-2021-0668-0047>

Recommended Assumptions and Actions (Cont.)

- Assume: EPA will take > 4 months to approve/deny case-by-case request
- Submit any case-by-case requests before August 5, 2024 (as recommended by EPA)
- Develop extension request (if needed)
- Develop permitting strategy for extensions and case-by-case emission limit (including applications to authorize installation of controls)





Thank you

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