



Addressing The Shortage Of Emission Reduction Credits In Maricopa County

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Mission

Working to improve the air of Maricopa County so customers, residents and visitors can live, work, and play in a healthy environment.



Agenda

- Background
- Timeline of Emission Reduction Credits (ERCs)
- Shortage of ERCs in Maricopa County
- Maricopa County Air Quality Department (MCAQD) ERC Program
- Rule 205 – A Closer Look
- Questions



Background

MCAQD Current NAAQS Status

- Attainment
 - Nitrogen dioxide (NO₂)
 - Carbon monoxide (CO)
 - Particulate matter 2.5 micrometers or less (PM_{2.5})
 - Sulfur dioxide (SO₂)
 - Lead (Pb)
- **Nonattainment**
 - Ozone
 - Moderate – 2008 and 2015 ozone NAAQS
 - PM₁₀
 - Serious – 1987 PM₁₀ NAAQS

Nonattainment Federal Requirements

- Nonattainment New Source Review (NNSR)
 - Requires MCAQD implement NNSR provisions
- NNSR – Offsets
 - Any new major stationary source or major modification must obtain emission reductions to offset the resulting increased emissions.
 - Offsets must comply with offset integrity criteria:
 - Surplus, permanent, quantifiable, federally enforceable, and real
 - Offset ratio in a moderate ozone nonattainment area: 1.15:1



Timeline of ERCs

Timeline

ERCs in Maricopa County

1998

- Governor's Air Quality Strategies Task Force issues a recommendation for an air pollution credit clearinghouse or bank to facilitate emission offsets and reduction activities for criteria air pollutants within Arizona.

1999

- HB 2594 (A.R.S. § 49-410) establishes Arizona Emissions Bank and basic requirements for credits from permitted sources.

2003

- MCAQD adopts Rule 204 (Emission Reduction Credit (ERC) Generation, Certification, and Use) for credits from permitted sources.

2017

- HB 2152 (A.R.S. § 49-410) allows credits to be generated, certified, and used by nontraditional or nonpermitted sources, including mobile sources.

Timeline

ERCs in Maricopa County

2019

- MCAQD adopts revisions to Rule 204 to allow for generation of ERCs from nontraditional sources, including the electrification of onsite equipment.
- State Implementation Plan (SIP) revision submitted December 20, 2019.

2021

- Waste Management – Intel MERC Project: Waste Management replaces 225 diesel refuse trucks with 225 CNG refuse trucks for 33.6 tons of NOx credits.
- SIP revision submitted August 2, 2022.

2023

- MCAQD adopts Rule 205 (Emission Offsets Generated by Voluntary MERCs) to allow for generation of ERCs from captive fleet mobile sources (MERCs).
- SIP revision submitted May 4, 2023.

2024

- EPA final approval of Waste Management MERC Permit Conditions on December 16, 2024.
- EPA proposes conditional approval of Rule 205 on August 22, 2024.

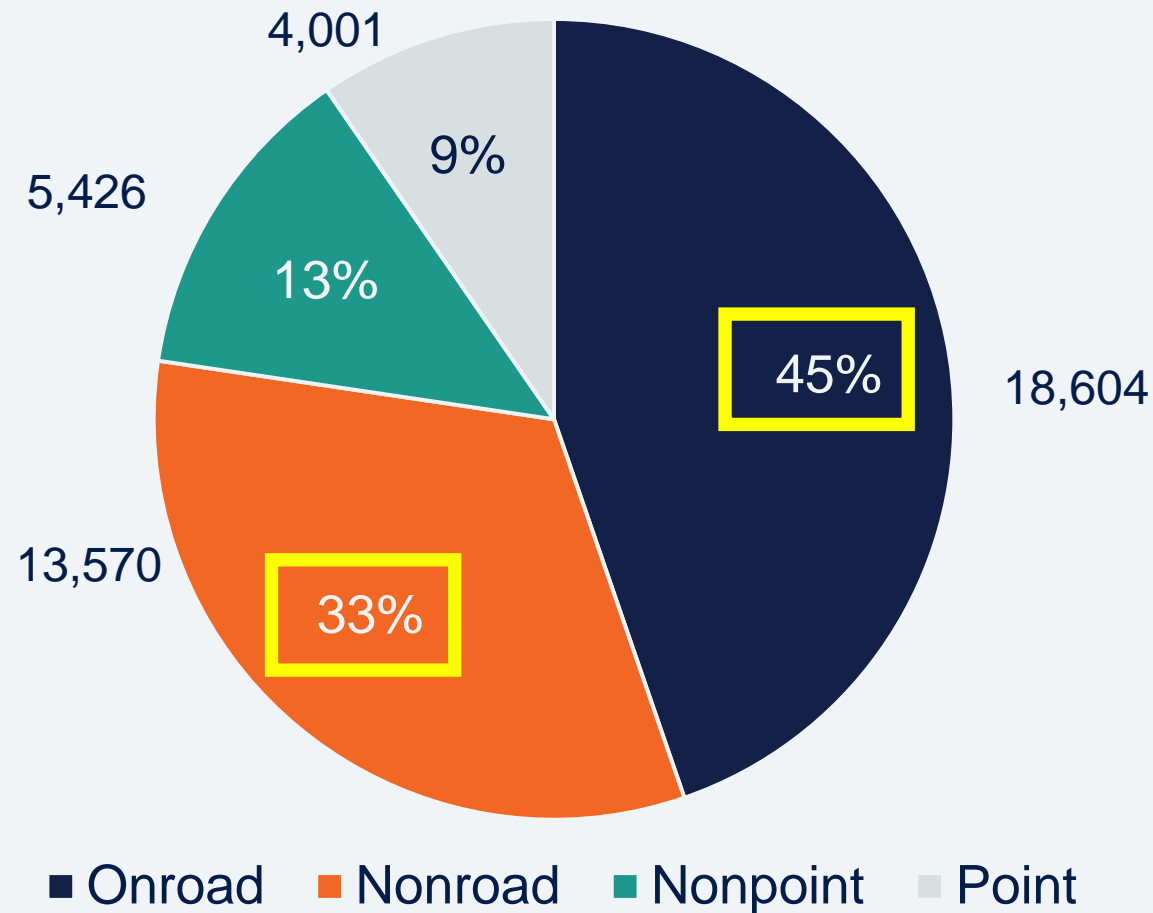


Maricopa County ERC Shortage

Maricopa County ERC Shortage

- Maricopa County has been working to address NNSR offset requirements for over 25 years.
- Current situation:
 - Majority of available ERCs have been included in previous major source permitting actions.
 - Minimal traditional stationary source emission reductions are currently available (i.e., facility shutdown, addition of control) to generate ERCs.
 - Need to find alternative sources of ERCs, specifically NOx ERCs.

2020 NO_x Emissions (Tons per Year)



Total = 41,601 tons

Generating ERCs From Mobile Sources and Providing NSR Offsets

How to facilitate generation of **ERCs from mobile sources**, which **meet federal requirements** and may be used as NSR offsets?

- Mobile Sources:
 - Significant contribution to Maricopa County's NOx Periodic Emissions Inventory (PEI)
 - Significant quantity of potential ERCs available
- Benchmarking:
 - Mobile source ERC rules have been adopted by other air quality agencies across the country.
 - Unfortunately, **little to no actual ERC generation and issuance** has occurred, with some rules being adopted over 20 years ago.
 - MCAQD has had extensive discussions with EPA and stakeholders to develop practical and approvable mobile source ERC rules.



Maricopa County ERC Program

Rule 203

ERC General Requirements

- Date Locally Adopted: December 11, 2024
- Describes procedures for the generation and certification of ERCS from **traditional sources** along with general requirements for the use of ERCs, registration of ERCs in the Arizona Emissions Bank, and fees

Rule 204

ERC Generation, Certification, and Use

- Date Locally Adopted: December 11, 2019
- Describes procedures for the generation, certification, and utilization of ERCs for use as offsets
 - Truck Stop Electrification
 - Transport Refrigeration Units
 - Onsite Equipment

Rule 205

Emission Offsets Generated by Voluntary Mobile Source ERCs (MERCs)

- Date Locally Adopted: April 26, 2023
- Describes procedures for generating and certifying MERCs through the **nontraditional** source replacement or retrofit of an onroad captive fleet of vehicles

Economic Incentive Program (EIP)

Rules 204 and 205

- These rules are considered EIPs:
 - Provide a market-based emission trading program whereby mobile source qualifying emission reductions are certified as ERCs.
 - These ERCs may be obtained by a stationary source and used as offsets under the NNSR program.
- Nontraditional ERC rules history:
 - MCAQD has been developing these rules since 2014 to help meet the existing shortage of offsets in Maricopa County.

Rule 204

Rulemaking Status

- Submitted to EPA for SIP approval on December 20, 2019
 - Currently working with EPA to develop an approvable and useable rule that provides for generation of ERCs from nonroad engines
- Potential revisions
 - Remove:
 - Truck stop electrification, transport refrigeration unit categories
 - General ERC and traditional source requirements (Rule 203)
 - Add:
 - New nonroad source categories
 - Construction equipment
 - Railyard switcher engines
 - Revise:
 - Airport ground support equipment
- Anticipated local adoption of current rulemaking: Fall 2025

Rule 205

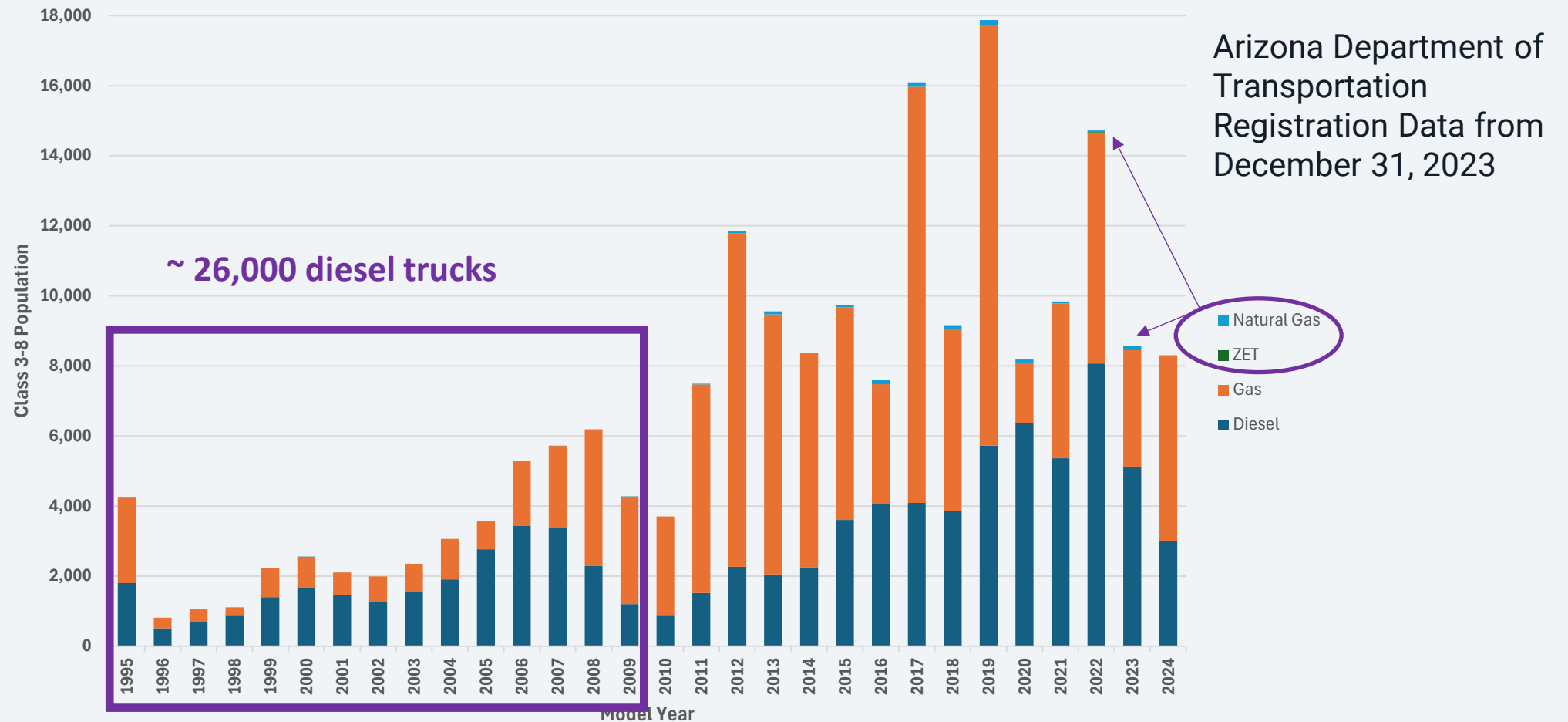
Rulemaking Status

- Submitted to EPA for SIP approval on May 4, 2023
- EPA proposed conditional approval on August 22, 2024
 - MCAQD worked with EPA to address deficiencies identified in the rule
- In addition, MCAQD worked with stakeholders to address the ERC credit calculation.
 - Provide adequate credit value to incentivize MERC generation (**calculation methodology**)
- Anticipated local adoption of current rulemaking: May 21, 2025

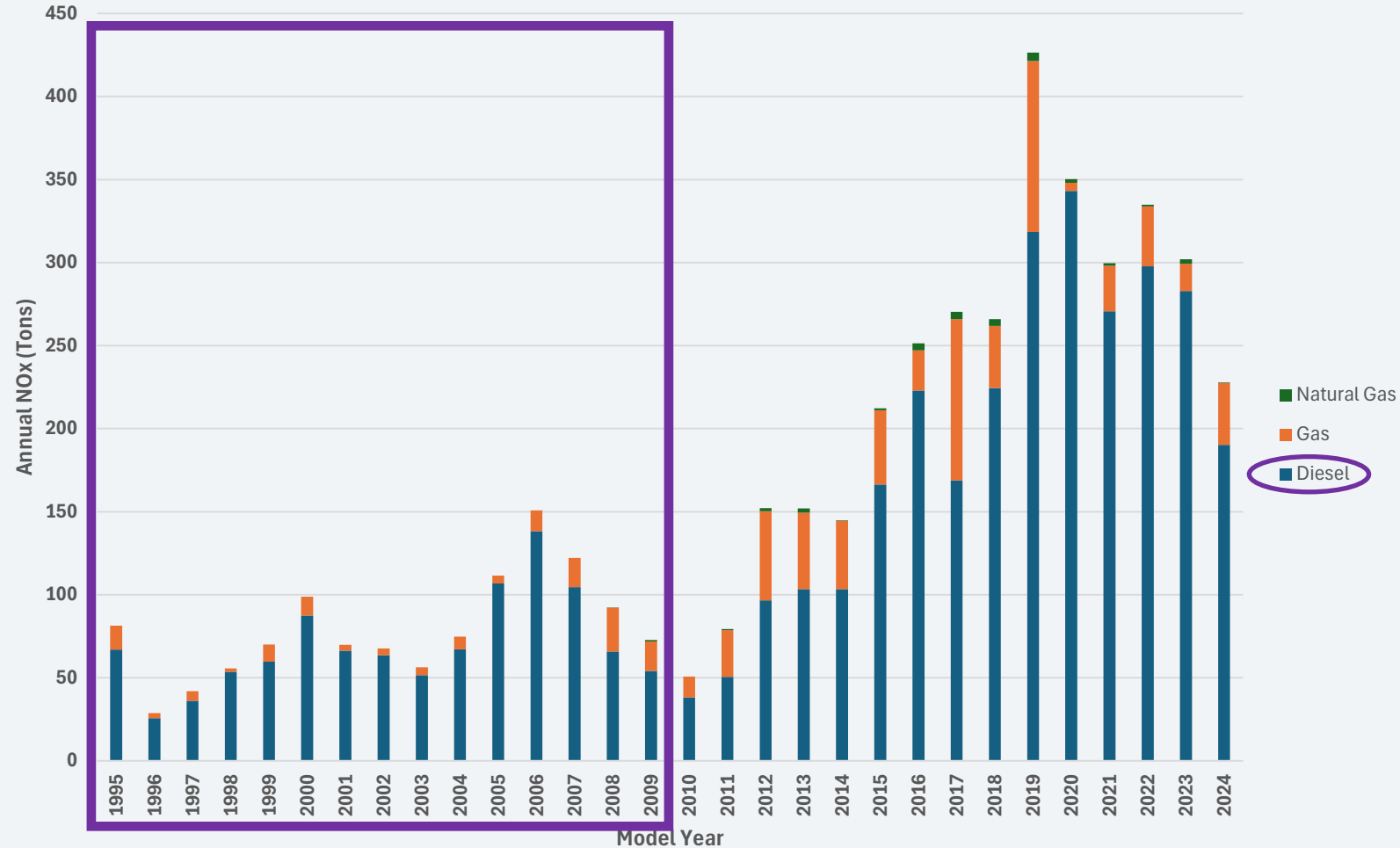


Rule 205 – A Closer Look

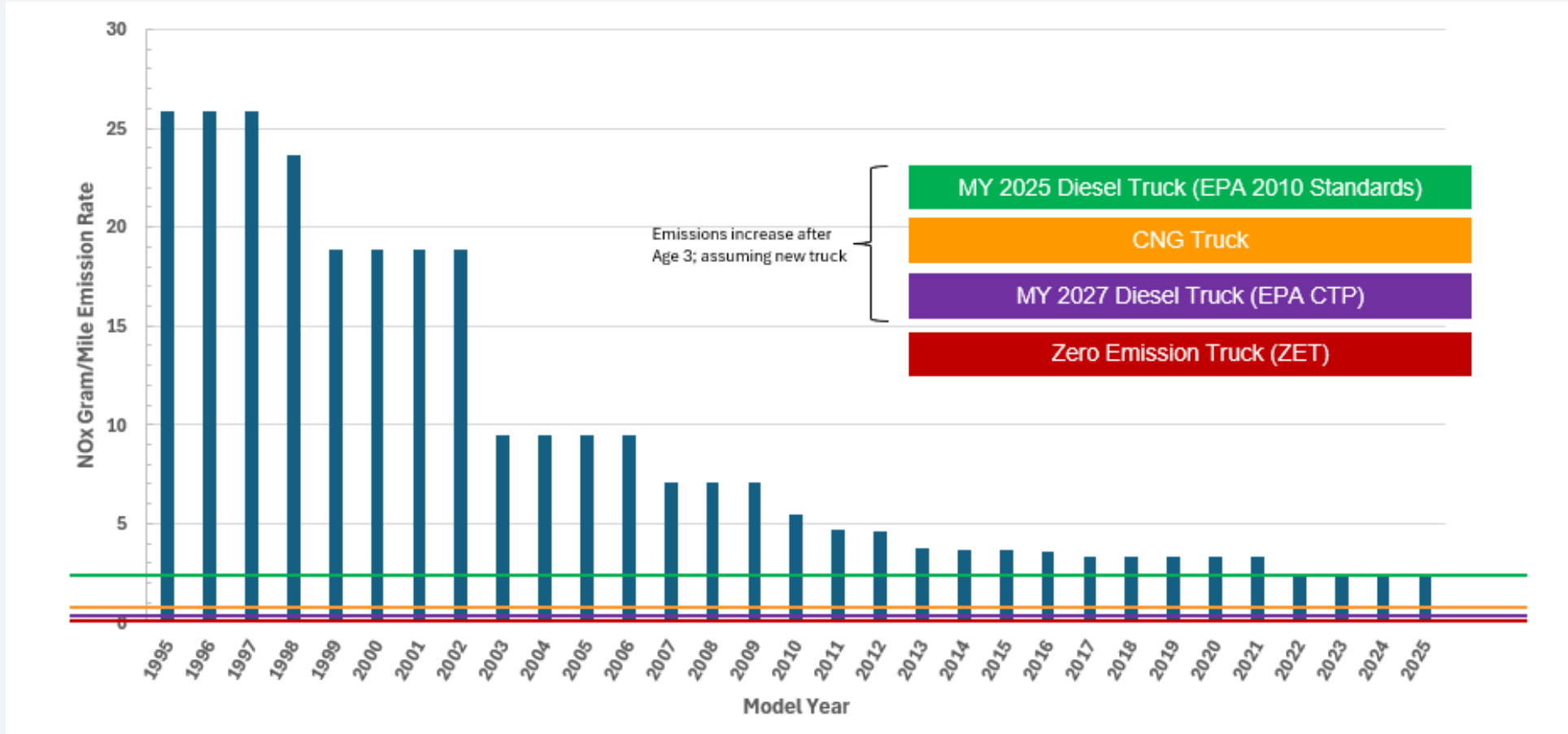
Maricopa/Pinal County Class 3-8 Truck and Bus Population by Model Year and Fuel Type



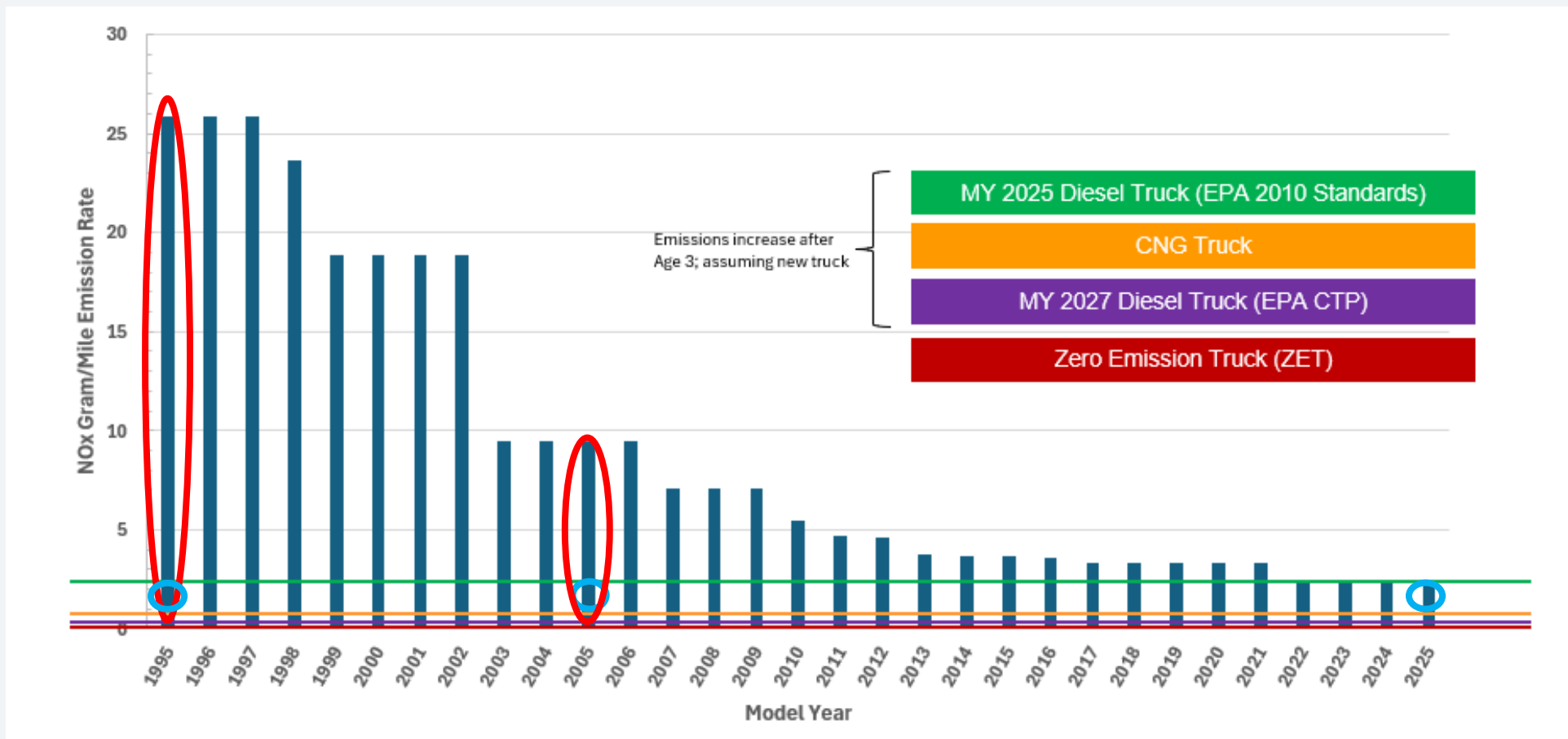
Baseline Heavy-Duty Truck and Bus NO_x Emissions by Model Year and Fuel



MOVES Class 8 Diesel NO_x Emission Rates with Replacement Options Superimposed



ERC Calculation Methodology



An Economic Incentive Program that Provides a Real Incentive

- Rule 205 currently provides credit for emission reductions shown in the **blue oval** on the previous slide, **no matter what the model year of the original vehicle**.
 - Stakeholders have informed MCAQD the credit for emission reduction shown in the blue oval is not sufficient incentive to retrofit or replace their captive fleet vehicles.
- MCAQD is revising Rule 205 to provide a real incentive so that stakeholders will utilize it to generate MERCs.
 - MCAQD wants to provide stakeholders with the **maximum incentive** (i.e., **red oval** on the previous slide) **while complying with Clean Air Act offset integrity criteria**.

EPA Concerns

Maximum Incentive and Offset Integrity Criteria

- MCAQD understands EPA has concerns associated with providing maximum incentive, specifically with surplus and permanence, and MCAQD has worked to address those concerns.

Surplus

Offset Integrity Criteria

- **EPA concern:** MERCs may be “double counted” in attainment demonstration modeling and transportation conformity analysis.
- **MCAQD solution:** Work with Maricopa Association of Governments (MAG) to ensure MERCs are not double counted.
 - **MAG:** Include 1,000 tons of additional NOx emissions in the attainment demonstration modeling to be used as MERCs and apply issued MERCs to the appropriate transportation conformity analysis years.

Permanence

Offset Integrity Criteria

- **EPA concern:** The emission reductions for mobile sources are not permanent.
- **MCAQD solution:** MCAQD understands MERCs must meet two elements to ensure permanency as discussed on next slide.
 - Based upon EPA's technical support document for the Rule 205 proposed conditional approval.
 - MCAQD has worked with Region 9 to incorporate revisions to address these elements.

Permanence

- **Element 1:** An ERC rule must ensure that the original vehicle will not continue to operate in the nonattainment area.
 - Replacement: Render the original vehicle inoperable or remove the vehicle from the nonattainment area.
 - Retrofit: Maintain the engine performance standard that was the basis for granting the quantity of MERCs.
- **Element 2:** Require new fleet vehicles to achieve the same activity levels as the original fleet vehicles to demonstrate load shifting has not occurred.
 - Ensure vehicle miles traveled (VMT) for the new fleet vehicle remains at the same level or higher for at least **20** years.

Rule 205

Current Rulemaking with EPA

- Additional Significant Proposed Revisions (some to address EPA identified deficiencies):
 - Applicability of Rule 205 limited to ozone precursors
 - Relocation of original vehicles
 - Cannot be relocated to any current ozone nonattainment area
 - Revised GPS requirements
 - Broadened to fleet management system
 - Fleet management system exemption
 - Offset integrity responsibilities
 - Demonstration of continued compliance by a generator to show a VMT shortfall is not a result of load shifting

Rule 205

Next Steps

- Rule 205 is currently open for public comment until local adoption anticipated for May 21, 2025.
- Upon local adoption, MCAQD will submit the rule to EPA for approval into the Arizona SIP in concurrence with the request to withdraw the May 4, 2023 submittal.

In Conclusion

- MCAQD ERC rules are economic incentive programs needed to generate ERCs.
 - Currently there is a large shortage of ERCs in the Phoenix-Mesa ozone nonattainment area.
 - ERCs are critical to facilitating industrial growth in Maricopa County.
- An ERC program is only successful if it is able to provide a large enough incentive to encourage stakeholder participation.
 - Without a sufficient incentive, stakeholders have informed MCAQD they will not participate in the program.
- MCAQD seeks to create useable and practical rules in collaboration with EPA, for the benefit of stakeholders, air quality, and everyone who resides in Maricopa County.

Questions



Thank You



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