



NC Advanced Clean Trucks – Wrap-Up Webinar
February 21, 2023
Division of Air Quality



Agenda

Overview / Synopsis

Feedback received

- Rule related
- Other

Next Steps

Keeping Engaged



Reducing GHGs: NC Executive Actions

Oct. 2018

EO 80

- Reduce GHG emissions by 40% below 2005 levels by 2025
- Increase total number of registered LD ZEVs to at least 80,000 by 2025
- Reduce energy consumption in state-owned buildings by 40% below 2002-2003 levels

Jan. 2022

EO 246

- Reduce GHG emissions by 50% below 2005 levels by 2030 & net-zero by 2050
- Increase total number of registered LD ZEVs to at least 1.25 million by 2030
- Increase the sale of ZEV so that 50% of in-state sales are zero emission by 2030
- NC DOT to develop Clean Transportation Plan by April 2023

July 2020

MHD ZEV MOU

- Advance & accelerate MHD ZEV sales & reduce GHGs from this sector
- 30% of all new MHD vehicle sales be zero-emission vehicles by 2030
- 100% of all new MHD vehicle sales be zero-emission vehicles by 2050

Oct. 2022

EO 271

- MHD vehicle manufacturers to sell increasing percent of ZEVs each year (Advanced Clean Trucks Program)
- NC DHHS to publish report on EJ impacts of transportation-related pollution
- NC DOT to develop NC ZEV Infrastructure Needs Assessment

Aligned Clean Transportation Initiatives

Oct 2019

The North Carolina Zero-Emission Vehicle Plan
(NCDOT)

Ongoing

Volkswagen Settlement
Program (NCDEQ)

Aug 2022

The NC Electric Vehicle
Infrastructure (NEVI)
Deployment Plan
(NCDOT)

Oct 2022

2022 NC Motor Fleet ZEV
Update
(NCDOA)

Feb 2023

NC Deep
Decarbonization
Pathways Analysis
(Governor's Office)

April 2023

NC Clean Transportation
Plan
(NCDOT)













Class 2 - 6,001 to 10,000 lbs  Minivan  Cargo Van  Full-Size Pickup  Step Van
Class 3 - 10,001 to 14,000 lbs  Walk-in  Box Truck  City Delivery  Heavy-Duty Pickup
Class 4 - 14,001 to 16,000 lbs  Large Walk-in  Box Truck  City Delivery
Class 5 - 16,001 to 19,500 lbs  Bucket Truck  Large Walk-in  City Delivery
Class 6 - 19,501 to 26,000 lbs  Beverage Truck  Single-Axle  School Bus  Rack Truck
Class 7 - 26,001 to 33,000 lbs  Refuse  Furniture  City Transit Bus  Truck Tractor
Class 8 - 33,001 lbs & Over  Cement Truck  Truck Tractor  Dump Truck  Sleeper

Truck Classifications

Vehicle classes are based on gross vehicle weight rating (GVWR).
 Class 2 is subdivided into:

- **Class 2a:** GVWR of 6,001-8,500 lbs.
- **Class 2b:** GVWR of 8,501-10,000 lbs.

MHDVs under ACT consist of classes 2b-8.

Class 2b-3	Class 4-8	Class 7-8 Tractors
   	     	  

Growing NC's Zero-Emission Vehicle Market

Executive Order 271

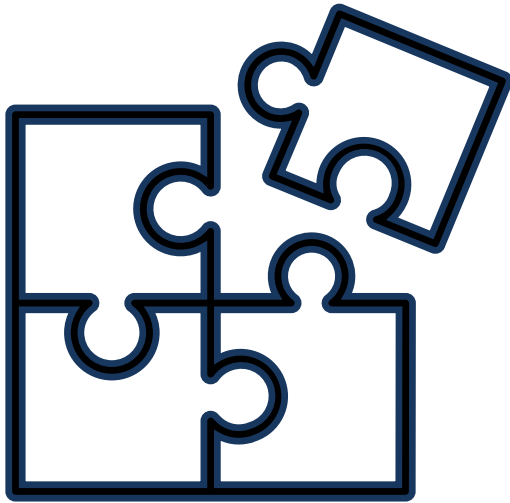
- Signed October 25, 2022
- Accelerate transition to clean energy economy
- Create good jobs and opportunities for all
- Protect public health and the environment
- Advance environmental justice and equity



Link to EO 271: <https://governor.nc.gov/media/3457/open>
EO 271 FAQ: <https://governor.nc.gov/media/3456/open>



Executive Order 271 – Sections



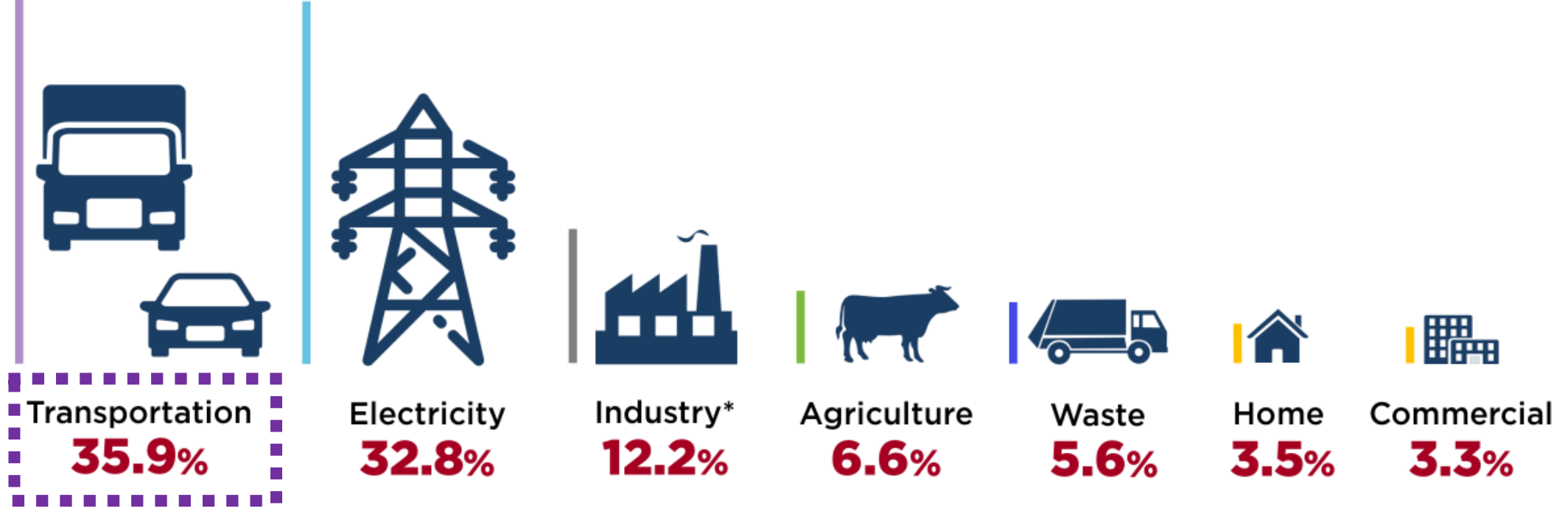
- 1. Advanced Clean Trucks Rule**
- 2. Distribution of State and Federal Funds**
- 3. Complementary Strategies**
- 4. Public Health and Health Equity**
- 5. Zero-Emission Vehicle Infrastructure Needs Assessment**
- 6. State Motor Fleet ZEV Transition**
- 7. Environmental Stewardship Initiative**



Outreach Timeline

- **Information Session** – Jan. 9, 2023, from 3-4 p.m. via WebEx
- **Charlotte Stakeholder Meeting** — Jan. 13, 2023, from 9-11 a.m.
- **Burlington Stakeholder Meeting** — Jan. 23, 2023, from 4-6 p.m.
Live Spanish Interpretation Offered
- **Pembroke Stakeholder Meeting** — Jan. 25, 2023, from 1-3 p.m.
- **Stakeholder Input Webinar #1** — Feb. 1, 2023, from 2-4 p.m. via WebEx.
Live Spanish Interpretation Offered
- **Stakeholder Input Webinar #2** — Feb. 1, 2023, from 6-8 p.m. via WebEx.
Live Spanish Interpretation Offered
- **Final Stakeholder Webinar** — Feb. 21, 2023, from 1-2:30 p.m. via WebEx.

Gross GHG Emissions by Economic Sector in 2018



2018 Gross GHG Emissions

159.5 million metric tons of CO₂e

CO₂ emissions from fossil fuel combustion:

81.3%

of total gross emissions

CO₂ emissions removed by forests & other lands:

26.4%

of total gross emissions

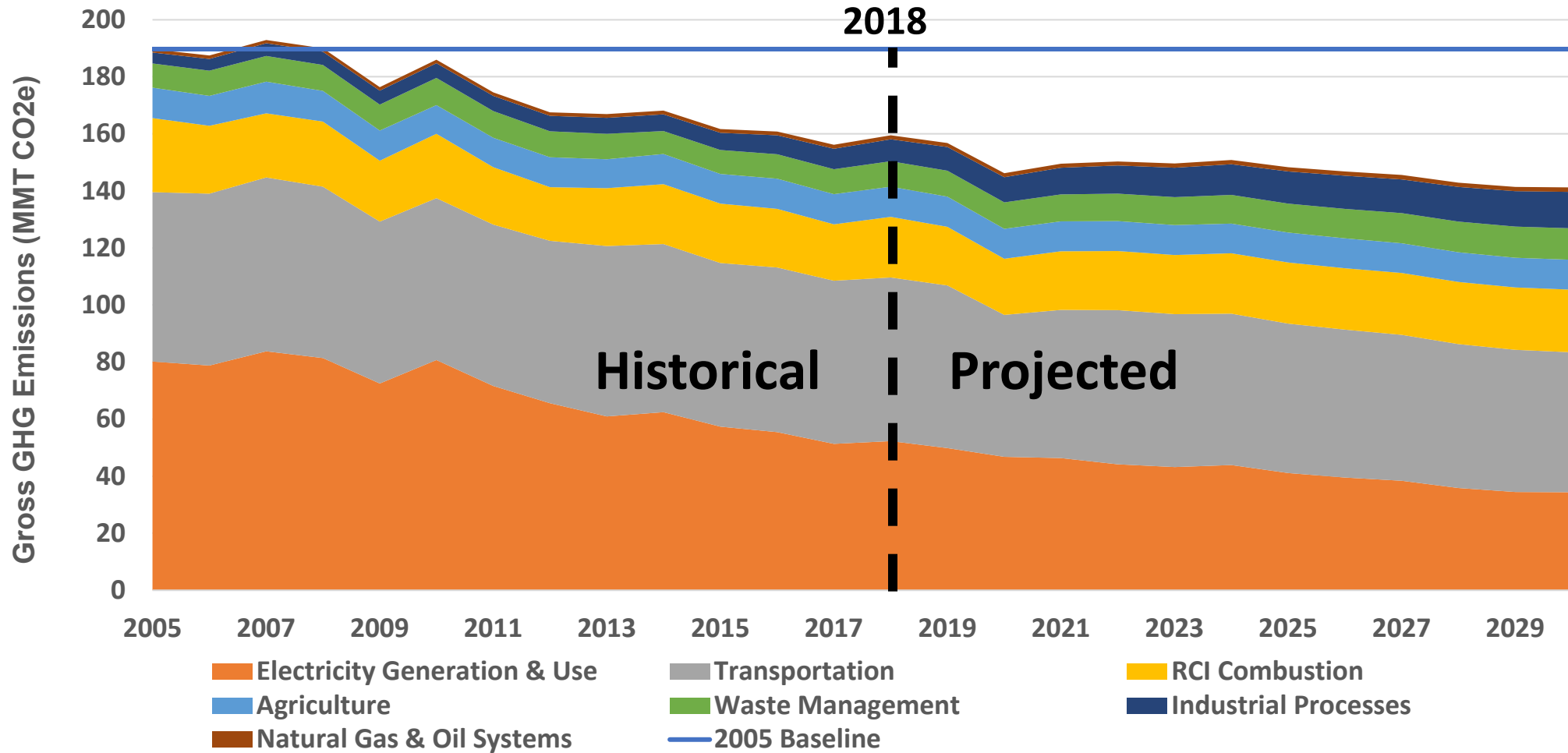
2005 - 2018 Change in Gross GHG Emissions

- ▼ **34.7%** — Electric Generation
- ▼ **16.5%** — Residential
- ▼ **3.5%** — Transportation
- ▲ **1.7%** — Industry*
- ▲ **3.3%** — Commercial

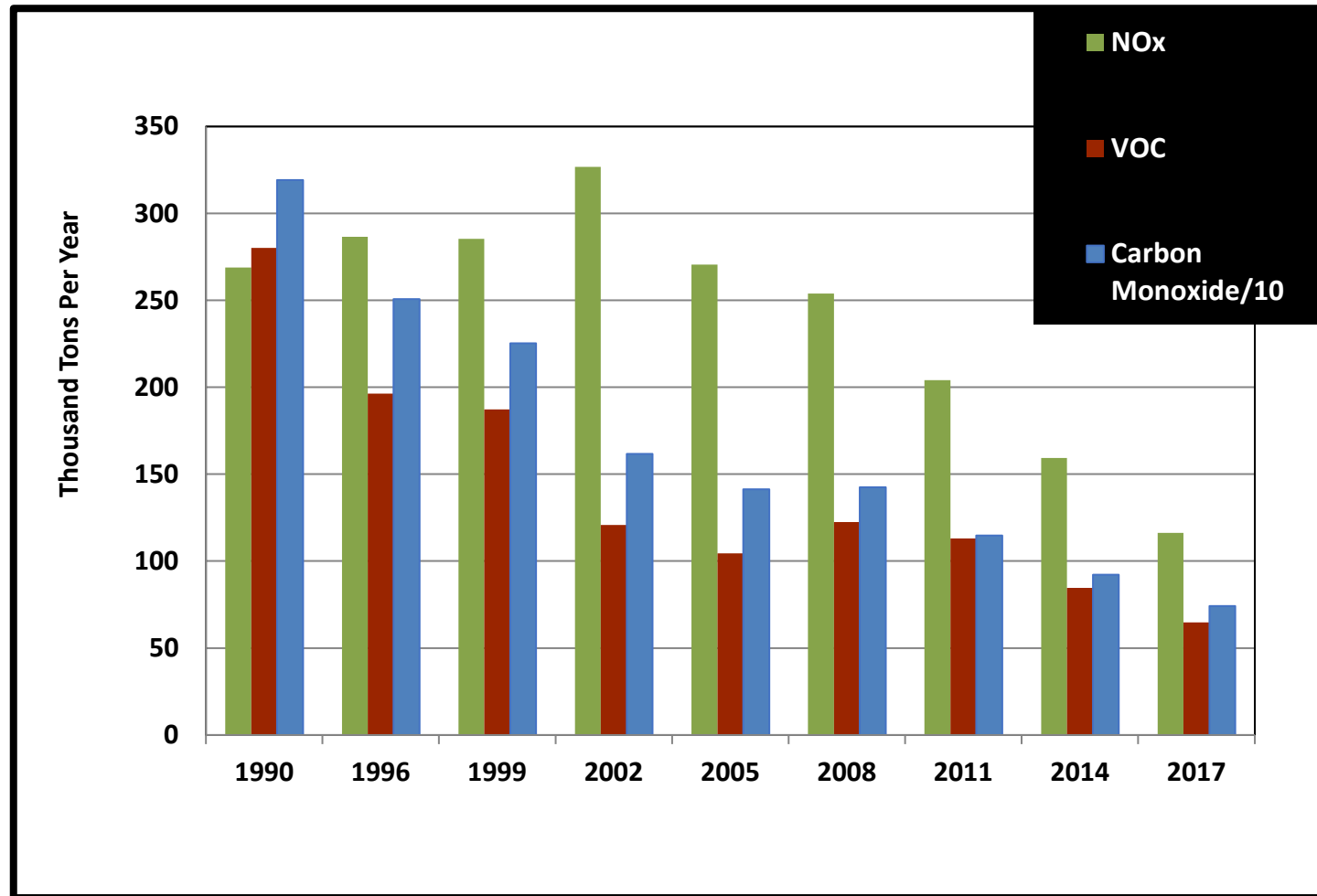
Statewide Net GHG Reductions (2005-2018)

↓ **23.0%**

NC Gross GHG Emissions Trends by Source Sector, 2005-2030



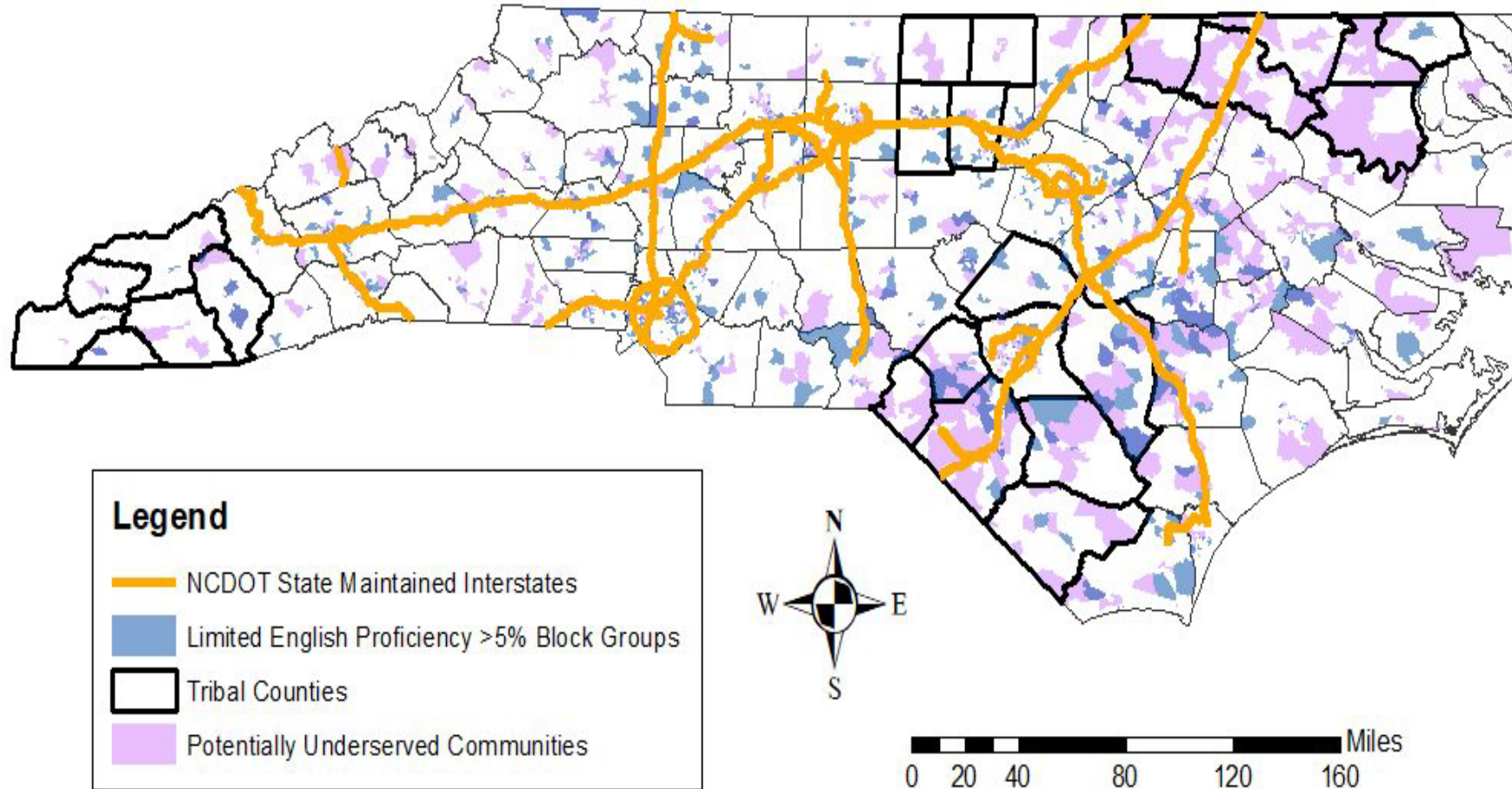
On-road Mobile Source Emissions Reductions*



* The NOx emissions spike in 2002 is attributed to EPA adjusting the onroad emissions model.

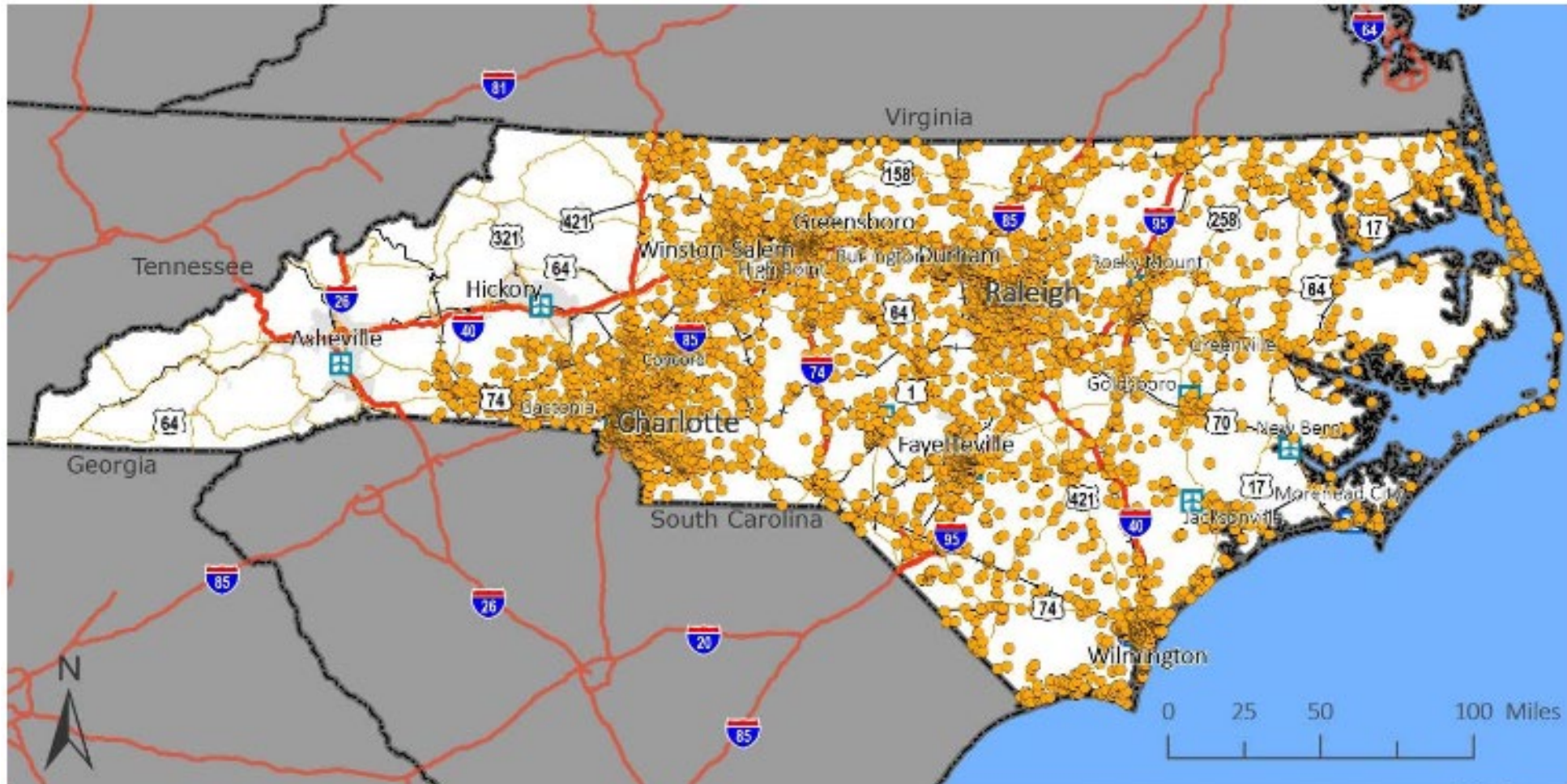
** CO emissions represented in this chart were divided by a factor of 10 for comparability purposes.

Environmental Justice Data Layers



The Potentially Underserved Communities layer is comprised of groups that meet criteria for both race/ethnicity AND poverty.

Transportation/Warehousing



Transportation and Warehousing Firms in North Carolina

- Transportation/Warehousing
- Interstate Highway
- US Highway



California Advanced Clean Trucks Rule

The Advanced Clean Truck regulation is part of California's holistic approach to accelerate a large-scale transition of zero-emission medium-and heavy-duty vehicles from Class 2b to Class 8, resulting in decreases in greenhouse gases, NO_x, PM, and SO₂ emissions from this source sector over time.

The regulation has two components:

- Zero-emission truck sales targets
- Vehicle manufacturer reporting

Executive Order 271 – Section 1

- **DEQ to develop rules for an Advanced Clean Trucks (ACT) program for consideration to the Environmental Management Commission (EMC).**
- **DEQ to collaborate with stakeholders in developing the rules.**

The ACT program will require medium- and heavy-duty vehicle manufacturers to sell an increasing percentage of zero-emission vehicles (ZEVs) over time.

- Provisions provide flexibility to manufacturers, through credits, trading & other features.
- Sales targets drive investment in other zero-emission technologies.
- Rules will ensure inventories of ZEVs will be available for purchase in the state.
- Bolsters NC's competitiveness in seeking federal support for clean energy development.



Clean Air Act - Section 177

Applicability

- Section 177 only provides authority to states with non-attainment plan provisions approved by EPA.
 - Most states, including NC, have had non-attainment plan provisions approved by EPA.

Identicality

- When adopting/enforcing motor vehicles emissions standards, Section 177 requires:
“... such standards are identical to the California standards for which a waiver has been granted for such model year ...”

Lead Time

- Section 177 provides:
“... California and such State adopt such standards at least two years before commencement of such model year ...”

Third Vehicle Prohibition

- Standards are either CA or Federal; states cannot cherry-pick standards

ACT Rule ZEV Sales Targets by Model Year

Year	Class 2b-3	Class 4-8	Class 7-8 Tractors
2024	5%	9%	5%
2025	7%	11%	7%
2026	10%	13%	10%
2027	15%	20%	15%
2028	20%	30%	20%
2029	25%	40%	25%
2030	30%	50%	30%
2031	35%	55%	35%
2032	40%	60%	40%
2033	45%	65%	40%
2034	50%	70%	40%
2035+	55%	75%	40%

Note: NC's entry year in the proposed ACT rule would be model year 2027.

*Preliminary Estimate of ZEV Sales by Model Year (Based on New Vehicle Registrations)**

Year	Class 2b-3	Class 4-8	Class 7-8 Tractors	Totals	Percent of Total New Registrations
2027	11,700	3,900	1,200	16,800	16%
2028	15,800	5,900	1,700	23,400	22%
2029	19,900	8,000	2,100	30,000	28%
2030	24,100	10,100	2,600	36,800	34%
2031	28,400	11,100	3,000	42,500	39%
2032	32,900	12,300	3,500	48,700	44%
2033	37,300	13,500	3,500	54,300	48%
2034	41,900	14,600	3,600	60,100	53%
2035	46,500	15,800	3,600	65,900	57%

* These preliminary projections may be overestimated because they include new vehicle registrations associated with vehicle owners that purchased their vehicle in another state and registered their vehicle in NC when they moved to NC. In addition, the projections do not account for any trading of credits between vehicle classes by vehicle manufactures once the ACT rule is in effect.

Tentative Rulemaking Timeline

Draft rule and fiscal note to Air Quality Committee (AQC) May 2023

Request to Proceed to Public Comment/Hearing - EMC July 2023

Public process / Hearings

August–October 2023

Hearing Officer's report to EMC / Adoption November 2023

Potential Effective date January 2024



What We Heard – Program Related

Suggestions	Next Steps
Hold a meeting with the vehicle manufacturers	Meeting(s) are planned
Hold a meeting with utilities	Meeting(s) are planned
Provide updated maps showing local truck use and urban/rural differences	NC DOT, NC DHHS and NC DEQ working on creating updated maps
How will sales targets be enforced?	DEQ evaluating using existing tiered enforcement guide



What We Heard – Environmental Justice

Challenge	Next Steps
Need to improve two-way communication and trust	<ul style="list-style-type: none">• Partner with historically underserved and overburdened communities to align local needs with clean transportation initiatives• Reference and update DEQ’s Public Participation Plan with feedback from communities• Conduct targeted outreach to local leaders to communicate stakeholder engagement opportunities
Insufficient inclusion in the clean transportation transition	<ul style="list-style-type: none">• Partner with community-based organizations (CBOs) and non-profit advocacy groups to connect clean transportation messaging and resources with historically underserved and overburdened communities• Engage with the NC Clean Transportation Plan workgroups
Many communities experiencing the largest air quality pollution burdens are traditionally underserved	<ul style="list-style-type: none">• Refine and utilize data and mapping to identify disproportionately impacted communities• Promote the integration of equity and health metrics in plans, programs and disbursement of funding• Target clean transportation investment and technical assistance in historically underserved and overburdened communities

What We Heard – Investment Needs

Challenge	Next Steps
Resource Constraints	<ul style="list-style-type: none">• Align outreach and program design across state agencies when investing available clean transportation funding:<ul style="list-style-type: none">○ National Electric Vehicle Infrastructure (NEVI) program; Congestion Mitigation and Air Quality (CMAQ) program; Diesel Emission Reduction Grants (DERA) program• Identify and pursue additional funding opportunities to support clean transportation objectives (e.g.):<ul style="list-style-type: none">○ Low or No Emission Vehicle Program○ Clean Heavy-Duty Vehicle Program○ Clean School Bus Program○ Grants for Charging + Fueling Infrastructure○ GHG Reduction Program
Ensuring Resources Support Community Needs	<ul style="list-style-type: none">• Ongoing community engagement to inform scope and implementation of clean transportation initiatives• Conduct local outreach and education on investment opportunities (e.g. commercial vehicle tax credits)• Provide technical support for local communities to secure grants and third-party funding to support clean transportation advancements• Develop policies + programs that ensure access and affordability

What We Heard – Infrastructure/Workforce

Challenge	Next Steps
Infrastructure needs	<ul style="list-style-type: none">• Continued dialog with utilities will help plan for grid infrastructure needs (e.g. through implementation of NCCTP)• Communicate clean transportation priorities (e.g. charging infrastructure needs) to NC Building Code Council• Engage broad stakeholders in developing NCDOT's Charging and Fueling Infrastructure Needs Assessment pursuant to EO 271• (See previous slide for infrastructure investment opportunities and priorities)
Workforce needs	<ul style="list-style-type: none">• Integrate MHD ZEV considerations into clean energy workforce development initiatives (e.g. NC A&T's STEPs4GROWTH program)• Connect employers with State workforce initiatives• Integrate work-based learning and apprenticeship opportunities into clean transportation initiatives.



How to Keep in Touch

Today's slides to be posted on our website:

www.deq.nc.gov/ACT

Send us a comment via email or phone:

Email: daq.publiccomments@ncdenr.gov

Voice mail: 919-707-8726

Email/Phone comments accepted until Feb. 24, 2023



Contact information

Questions about outreach/public information:

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Thank you



Additional Resources

Other State ACT information:

California - <https://ww2.arb.ca.gov/our-work/programs/advanced-clean-trucks>

Oregon - <https://www.oregon.gov/deq/rulemaking/Pages/ctr2021.aspx>

Washington - <https://ecology.wa.gov/Air-Climate/Air-quality/Vehicle-emissions/Clean-cars>

New York - <https://newyorktruckstop.com/2022/01/10/new-yorks-advanced-clean-truck-rule/>

New Jersey - <https://dep.nj.gov/stopthesoot/advanced-clean-trucks-rule-fleet-reporting/>

Massachusetts - <https://www.mass.gov/regulations/310-CMR-700-air-pollution-control>

Vermont - <https://dec.vermont.gov/air-quality/laws/recent-regs>



Acronym List

DEQ: Department of Environmental Quality

DAQ: Division of Air Quality

EPA: U.S. Environmental Protection Agency

ACT: Advanced Clean Trucks

MHD or MHDV: Medium- and Heavy-Duty Vehicles

ZEV: Zero-Emission Vehicle

EO: Executive Order

EMC: Environmental Management Commission

AQC: Air Quality Committee

GHG: Greenhouse Gas

NOx: Nitrogen Oxide

PM/PM2.5: Particulate Matter

NAAQS: National Ambient Air Quality Standards

