

OTC Mobile Sources Committee Overview

OTC and MANEVU Stakeholders Meeting

April 24, 2025

Mobile Sources Committee

Chair, Paul Farrell, CT Department of Energy and Environmental Protection



OZONE TRANSPORT COMMISSION

Presentation Overview

MSC 2024 Charge

- ✓ Medium- and heavy-duty trucks.
- ✓ Tampering and aftermarket catalysts.
- ✓ Cross-committee coordination.
- ✓ Provide technical and policy support where needed, as resources allow.

Medium and Heavy-Duty Trucks

- Sonoma Technology analyzed emissions benefits of ACT and NOx Omnibus against the baseline in the new MOVES5 model
 - Incorporates the Phase 3 heavy-duty GHG regulation in the baseline
 - Assumes more ZEVs in the baseline than MOVES4
 - The county scale modeling was conducted for two National Emissions Inventory (NEI) representative counties in Connecticut
 - Modeling was conducted for 2020, 2025, 2030, 2035, 2040, 2045, and 2050

Medium and Heavy-Duty Trucks

Heavy-Duty Vehicle Comparison of NOx Emissions (tons)

	EPA NOx	ACT NOx	Omnibus NOx	ACT+Omnibus NOx	Difference EPA:ACT+Omnibus NOx	Difference EPA: ACT NOx	Difference EPA: Omnibus NOx
2030	3,399	3,368	3,390	3,360	39	31	8
2035	2,101	1,948	2,073	1,920	182	154	28
2040	1,587	1,274	1,521	1,208	379	313	66
2045	1,323	898	1,258	833	490	425	65
2050	1,206	701	1,147	643	563	505	58
Cumulative NOx (tons)	42,680	36,595	41,677	35,593	7,087	6,085	1,003

MHV/HDV OBD I/M

- ERG presented to the MSC on findings related to work in an OTC state analyzing an OBD based I/M program for MHDs
 - Late-model HDVs are equipped with OBD monitored emissions control systems, which makes effective I/M programs feasible
 - ERG looked at variables impacting program efficacy - represented as “low” and “high” I/M effectiveness scenarios
 - Program costs were assumed to be fully covered by program test fee and incorporated repair costs over time for total cost
 - NESCAUM used COBRA to monetize health benefits (\$40-90M)
 - Cumulative average cost of effectiveness \$16,989/ton - \$18,037/ton
 - ~\$10K/ton in 2025 to ~\$26K/ton in 2040

Tampering and Aftermarket Catalysts

- The Mobile Sources Committee heard from Eastern Research Group (ERG) about their ongoing efforts, funded by EPA, on anti-tampering
- ERG is running a pilot to evaluate commercial tools to detect signs of potential tampering and develop estimates of the extent of tampering throughout the US

Cross Committee Collaboration

- The Mobile Sources Committee received an update from the modeling committee on plans to incorporate MOVES5 into regional emissions modeling.
- This includes updates that reflect
 - EPA's LD/MD multipollutant regulation
 - EPA's HD Phase 3 GHG regulation

As Resources Allow: Non-Road

- The Mobile Sources Committee heard from MARAMA on NOx and PM (2.5 & 10) Emissions from Non-road Agricultural and Construction Equipment in the eastern U.S.

Nonroad Equipment Emissions in the Eastern States 2022 Summary

Agricultural Equipment

Pollutant	Emissions (Tons)		% of Total Nonroad Emissions
	Annual	O ₃ Season*	
NOx	65,031	35,074	16%
PM ₁₀	4,593	2,487	11%
PM _{2.5}	4,454	2,412	11%

Construction Equipment

Pollutant	Emissions (Tons)		% of Total Nonroad Emissions
	Annual	O ₃ Season*	
NOx	112,882	51,248	28%
PM ₁₀	9,971	4,536	24%
PM _{2.5}	9,595	4,365	25%

* Preliminary results from EMF tool

As Resources Allow: MOVES 5 LDV

- Sonoma Technology analyzed emissions benefits of ACC II and LD/MD NOx against the new baseline in the new MOVES5 model in a representative OTC state
 - Incorporates EPA's LD/HD multipollutant regulation

Calendar Year	EPA NOx (tons)	CARB NOx (tons)	Difference (tons)
2030	2,041	2,025	16
2035	1,274	1,175	99
2040	813	612	201
2045	613	335	278
2050	558	232	325
Cumulative NOx (tons) 2030-2050	58,886	54,962	3,924

Summary and Discussion

Medium- and Heavy-duty Trucks

- Reviewed analysis of modeled emissions reduction from ACT and HD NOx Omnibus in comparison to EPA's HD Phase 3 GHG regulation, using MOVES5
- Evaluating EPA Phase 3 final rule emissions benefits
- Reviewed analysis of OBD based inspection and maintenance program for MHDs

Anti-Tampering

- Explored opportunities for states to participate in a tampering detection pilot project with ERG
- Followed state pilot to identify tampered HD vehicles

Cross Committee Collaboration

- Coordinating with the Modeling Committee on integrating MOVES5 into regional emissions modeling

Technical Support on Policy Where Needed

- Received a report on emissions from non-road sources in the eastern U.S.
- Reviewed analysis of modeled emissions reduction from ACC II and LD/MD NOx Omnibus in comparison to EPA's LD/MD multipollutant regulation, using MOVES5

Thank you!

Mobile Sources Committee

Chair, Paul Farrell, CT Department of Energy and Environmental Protection



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