

OTC Mobile Sources Committee Overview

OTC/MANEVU Commissioners' Annual Meeting

June 14, 2023

Mobile Sources Committee

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



OZONE TRANSPORT COMMISSION

Presentation Overview

Mobile Sources Committee 2022 Charge

- ✓ Medium- and heavy-duty truck NO_x.
- ✓ Tampering and aftermarket catalysts.
- ✓ Cross-committee coordination.
- ✓ Provide technical and policy support where needed.

Medium and Heavy-Duty Trucks

Update on Activities:

- Prepared a memo summarizing EPA's HD NOx NPRM and compared the standards to the California Air Resources Board (CARB)'s Omnibus.
- MSC and MANEVU TSC submitted joint comments on EPA's HD NOx NPRM.
- Updated 2021/22 MOVES3 + GREET modeling to evaluate OTC state adoption of the CARB heavy-duty regulations:
 - Advanced Clean Trucks (ACT).
 - Low NOx Omnibus.
 - EPA's final HD NOx emission standards in Clean Trucks Plan (CTP).

Medium and Heavy-Duty Trucks (continued)

Example state

Year	HDV NO _x emissions, TPY			Benefit, TPY		Incremental Benefit of Omnibus		CTP loss of benefit
	BAU	CTP	Omnibus	CTP	Omnibus	TPY	%	%
2030	3051	2962	2915	88	135	47	53%	35%
2035	2854	2670	2548	184	306	122	67%	40%
2040	2914	2627	2415	288	500	212	74%	42%
2045	2981	2622	2347	359	634	275	76%	43%
2050	3104	2691	2366	413	738	325	79%	44%

Medium and Heavy-Duty Trucks (continued)

Update on Activities (Continued):

- The MSC has drafted comments on EPA's HD GHG Phase 3 NPRM.
- The comments will be submitted to EPA on June 16th.
- Of interest to the MSC because of the significant NO_x reductions that could result from implementation of a final rule.

Tampering Update

Update on Activities:

- Commented on EPA's proposed National Compliance Enforcement Initiative for 2024-2027.
- Following an EPA pilot to evaluate a pre-commercial tampering detection tool.
- Working with states as they update HD I/M programs to incorporate I/M Best Practices paper recommendations.
- Updating a 2014 OTC aftermarket catalyst model rule.

Cross Committee Collaboration

Update on Activities:

- The MSC sent MOVES3 modeling results of the ACC II, Omnibus, and ACT to the Modeling Committee.
- Held a joint call to discuss the modeling results and priorities for upcoming air quality modeling.
- Wintertime nitrate discussion with TSC:
 - Will review results of modeling to show NO_x reductions from Omnibus, ACT, CTP, and ACC II.
 - Will discuss temperature adjustment in EPA CTP program and impact on wintertime NO_x emissions.

As Resources Allow: ACC II Modeling

Analyzed benefits of the ACC II program in 10 OTC states:

- CT, DE, MA, MD, ME, NJ, NY, RI, VA, VT.
- Sonoma Technology conducted emissions modeling with MOVES3.
- Estimated changes in power plant emissions using DOE GREET model.
- Estimated ZEV population/sales/VMT by year.
- Conducted COBRA modeling to characterize health benefits.
- Produced a summary spreadsheet and fact sheet for each state.

ACCI Emissions and Health Benefits

Vehicle-only emission reductions relative to BAU:

- 40% - 54% for NO_x
- 16% - 22% for PM_{2.5}
- 57% - 76% for CO₂e

Modeled CY2040 health benefits in COBRA.

- Net benefit ranges from \$13 million (VT) to \$1.5 billion (NY).
- Highest impacts seen in areas with greatest population density.
 - More people exposed to pollution, and likely higher VMT.
 - Where EGU located in most populated counties, larger burdens will be experienced.

Additional Light-Duty Vehicle Work

- MSC preparing joint comments with NESCAUM on EPA's light-duty and medium-duty multi-pollutant NPRM.

Summary

Medium- and Heavy-duty Trucks

Evaluated final EPA low NOx regulation and compared to CARB Omnibus and ACT.
The MSC submitted joint comments with the MANEVU TSC on EPA's HD NOx rule (CTP).
Prepared comments on EPA's Phase 3 GHG regulation.

Anti-Tampering

Following EPA pilot tampering program results.
Incorporating I/M Best Practices paper recommendations into state I/M programs.
Updating a 2014 OTC model rule on aftermarket catalysts.

Cross Committee Collaboration

Identifying top control strategies for LD, MD, HD, nonroad and discussing with the MC and SAS.
Coordinating with the MC on ACC II, ACT, Omnibus, EPA HD NOx rule NOx reductions.
Coordinating with MANEVU TSC on wintertime nitrates.

Technical Support on Policy Where Needed

Evaluated the emissions and health benefits of ACC II.
Preparing comments to EPA on its light-duty and medium-duty multi-pollutant NPRM.

Additional Slides:

State-by-State Modeling for Omnibus/ACT/CTP

Omnibus/CTP Modeling

District of Columbia

Year	HDV NO _x emissions, TPY			Benefit, TPY		Incremental Benefit of Omnibus		CTP loss of benefit
	BAU	CTP	Omnibus	CTP	Omnibus	TPY	%	%
2030	610	589	586	22	24	3	12%	11%
2035	592	545	535	47	58	10	22%	18%
2040	626	549	528	77	98	21	27%	21%
2045	663	564	535	99	128	29	29%	23%
2050	714	597	561	117	154	37	31%	24%

Omnibus/CTP Modeling

Maryland

Year	HDV NO _x emissions, TPY			Benefit, TPY		Incremental Benefit of Omnibus		CTP loss of benefit
	BAU	CTP	Omnibus	CTP	Omnibus	TPY	%	%
2030	14,641	14,156	13,963	485	678	193	40%	28%
2035	13,527	12,532	12,013	996	1,514	518	52%	34%
2040	13,458	11,930	11,048	1,529	2,410	881	58%	37%
2045	13,875	11,958	10,799	1,917	3,076	1,159	60%	38%
2050	14,539	12,327	10,943	2,212	3,596	1,384	63%	38%

Omnibus/CTP Modeling

Pennsylvania

Year	HDV NO _x emissions, TPY			Benefit, TPY		Incremental Benefit of Omnibus		CTP loss of benefit
	BAU	CTP	Omnibus	CTP	Omnibus	TPY	%	%
2030	34,722	33,595	33,161	1,127	1,561	434	39%	28%
2035	32,218	29,922	28,730	2,296	3,489	1,193	52%	34%
2040	32,203	28,680	26,625	3,523	5,578	2,055	58%	37%
2045	33,140	28,731	26,032	4,409	7,108	2,699	61%	38%
2050	34,670	29,591	26,371	5,080	8,299	3,220	63%	39%

Omnibus/CTP Modeling

Rhode Island

Year	HDV NO _x emissions, TPY			Benefit, TPY		Incremental Benefit of Omnibus		CTP loss of benefit
	BAU	CTP	Omnibus	CTP	Omnibus	TPY	%	%
2030	1,865	1,804	1,777	62	88	26	43%	30%
2035	1,744	1,618	1,546	126	198	72	57%	36%
2040	1,761	1,566	1,442	195	319	124	64%	39%
2045	1,816	1,572	1,409	244	407	163	67%	40%
2050	1,905	1,623	1,429	281	476	195	69%	41%

Omnibus/CTP Modeling

Vermont

Year	HDV NO _x emissions, TPY			Benefit, TPY		Incremental Benefit of Omnibus		CTP loss of benefit
	BAU	CTP	Omnibus	CTP	Omnibus	TPY	%	%
2030	1,217	1,179	1,165	38	52	14	36%	26%
2035	1,135	1,057	1,018	79	117	39	49%	33%
2040	1,158	1,035	967	122	190	68	56%	36%
2045	1,192	1,039	950	153	242	89	58%	37%
2050	1,250	1,073	967	176	283	106	60%	38%