

# OTC Mobile Sources Committee Overview

## OTC/MANEVU Stakeholders Meeting

### April 21, 2023

## Mobile Sources Committee

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



# OZONE TRANSPORT COMMISSION

# Presentation Overview

## MSC 2022 Charge

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

# 2022 Charge: Medium- and Heavy-Duty Trucks

- ✓ Provide information on the emissions standards, emissions benefits, and program elements in the EPA HD NOx final rule.
- ✓ Quantify emissions benefits of state adoption of the California Omnibus regulation and coordinate with the Modeling Committee.
- ✓ Disseminate MOVES modeling results of California's Advanced Clean Trucks (ACT) rule performed for the OTC members.
- ✓ Provide technical and policy analyses to the MHD ZEV Initiative and engage with EPA on rulemakings that relate to MHD ZEV.

# Medium and Heavy-Duty Trucks

## Update on Activities:

- Sent OTC states a memo summarizing EPA's final HD NOx rule and compared the standards to California Air Resources Board (CARB) Omnibus.
- Updated 2021/22 MOVES3 + GREET modeling to evaluate OTC state adoption of the CARB heavy-duty regulations:
  - Advanced Clean Trucks (ACT).
  - Low NOx Omnibus.
  - Updated the analysis to include EPA's HD NOx emission standards in Clean Trucks Plan (CTP) final rule.
  - Seven states have been completed.

# Medium and Heavy-Duty Trucks (continued)

## Example state

Year	HDV NO <sub>x</sub> 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 will evaluate HD GHG Phase 3 proposed rulemaking and distribute information to the OTC directors.

# 2022 Charge: Tampering

- Review findings from I/M best practices paper and discuss implementation of the recommendations.
- Evaluate approaches to identify tampered vehicles.
- Continue to track and refine the Tampering Matrix.
- Engage with EPA as it implements its Tampering Policy.
- Encourage EPA to incorporate tampering-related excess emissions into the MOVES model and establish SIP credits for state anti-tampering programs.

# Tampering Update

## Update:

- Heard from CARB on their SIP credit method for HD I/M.
- Commented on EPA's proposed National Compliance Enforcement Initiative for 2024-2027.
- MSC discussion of I/M paper recommendations:
  - Re-convened MSC tampering workgroup.
  - Continue to discuss the white paper with OTC members and their I/M contractors.
  - Tampering workgroup working on a tampering authority memo.



# Tampering Update (Continued)

## Update:

- MSC is updating the 2014 OTC aftermarket catalyst model rule.
  - Purpose is to incorporate recent guidance that NYS issued.
  - OTC directors have approved updating the model rule.
  - The MSC will review proposed changes this summer.

# 2022 Charge: Cross Committee Collaboration

- Identify and share with the Modeling Committee, SAS Committee, and MANEVU TSC a list of top strategies to achieve ozone reductions, and other air quality and regional haze goals;
- Contribute to cross-committee discussions on VOC emissions in urban areas; and
- Hold a joint meeting with the Modeling Committee to discuss source apportionment.

# Cross Committee Collaboration

## Update

- The MSC sent MOVES3 modeling results of the ACC II, Omnibus, and ACT analyses to the Modeling Committee.
- Will schedule joint call to discuss the modeling results.
- Also, will schedule joint call to discuss source apportionment.
- Wintertime nitrate discussion with TSC:
  - Review results of modeling to show NO<sub>x</sub> reductions from Omnibus, ACT, CTP, and ACC II.
  - Discuss temperature adjustment in EPA CTP program and impact on wintertime NO<sub>x</sub> emissions.

# 2022 Charge: As Resources Allow

**Provide technical and policy support where needed on:**

- Aircraft-related emissions.
- Light-duty electric vehicles.
- EPA's light-duty multi-pollutant standards.
- Cryptocurrency mining issues in coordination with the SAS Committee.
- CARB's Tier 5 nonroad NO<sub>x</sub> standards.
- Other issues identified by the OTC Air Directors.

# 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.
  - Implementation of ACC II starting in model year 2026.
  - Implementation of ACC II starting in model year 2027.
- Estimate changes in upstream emissions using DOE's GREET model.
- Estimate ZEV population/sales/VMT by year.
- Conduct COBRA modeling to characterize health benefits.
- Produced a summary spreadsheet and fact sheet for each state.

# ACCII Emissions Benefits

Vehicle-only emission reductions relative to BAU:

- 40% - 54% for NO<sub>x</sub>
- 16% - 22% for PM<sub>2.5</sub>
- 57% - 76% for CO<sub>2</sub>e

# ACC II Health Benefits

Modeled CY2040 health benefits in COBRA.

- Net benefit ranges from \$13 million (VT) to \$1.5 billion (NY).

Highest impact seen in areas with highest population density.

- More people exposed to pollution, and likely higher VMT.
- If EGU sector is present in highest populated counties, larger burdens will be experienced.

# Summary

## **Medium- and Heavy-duty Trucks**

Evaluated final EPA low NOx regulation and compared to CARB Omnibus and ACT.

Engaged with EPA on MHD ZEV in Phase 3 GHG regulation.

## **Anti-Tampering**

Identifying where state regulations can be strengthened to facilitate enforcement.

Followed EPA pilot tampering program results and incorporate recommendations into state I/M programs.

## **Cross Committee Collaboration**

Identify top control strategies for LD, MD, HD, nonroad and discuss with the MC and SAS.

Urban VOC – mobile source component.

Coordinate with the MC on ACC II, ACT, Omnibus modeling and NOx reductions from the EPA HD NOx final rule.

Coordinate with MANEVU TSC on wintertime nitrates.

## **Technical Support on Policy Where Needed**

Evaluated the emissions and health benefits of ACC II.

Evaluate the emissions benefits of the proposed EPA LD multi-pollutant rule.