

# OTC SAS Committee Update

## OTC/MANEVU Stakeholders Meeting

### April 21, 2023

## Stationary and Area Sources Committee

Chair, Frank Steitz, New Jersey DEP



# OZONE TRANSPORT COMMISSION

# Presentation Overview

## **SAS 2022 Charge**

- ✓ Assessing Source Emissions Inventory
- ✓ Provide Technical Support on Individual Sectors
- ✓ Supporting RACT SIPs
- ✓ Review Modeling Outputs, Inputs, and Conclusions
- ✓ Office of Air Quality Planning and Standards (OAQPS) Engagement

## **Additional Focus Areas**

- ✓ Employ available emission inventory estimates to research and analyze additional strategies that reduce stationary and area source emissions in a cost-effective manner

# Assessing Source Emissions Inventory

## **SAS 2022 Charge:**

- Assess area source emissions contribution. Evaluate accuracy of the National Emissions Inventory (NEI) characterization of emissions.
- Identify top sectors of concern and identify opportunities for improvements in estimation methodology.

## **Status:**

- A workgroup has been formed.
- The workgroup is evaluating area source institutional and commercial boilers to see if improvements can be made in the NO<sub>x</sub> inventory.
- A preliminary look indicates the natural gas inventory may be fine but improvements to the distillate boiler inventory could be made.

# Provide Technical Support on Individual Sectors

## SAS 2022 Charge:

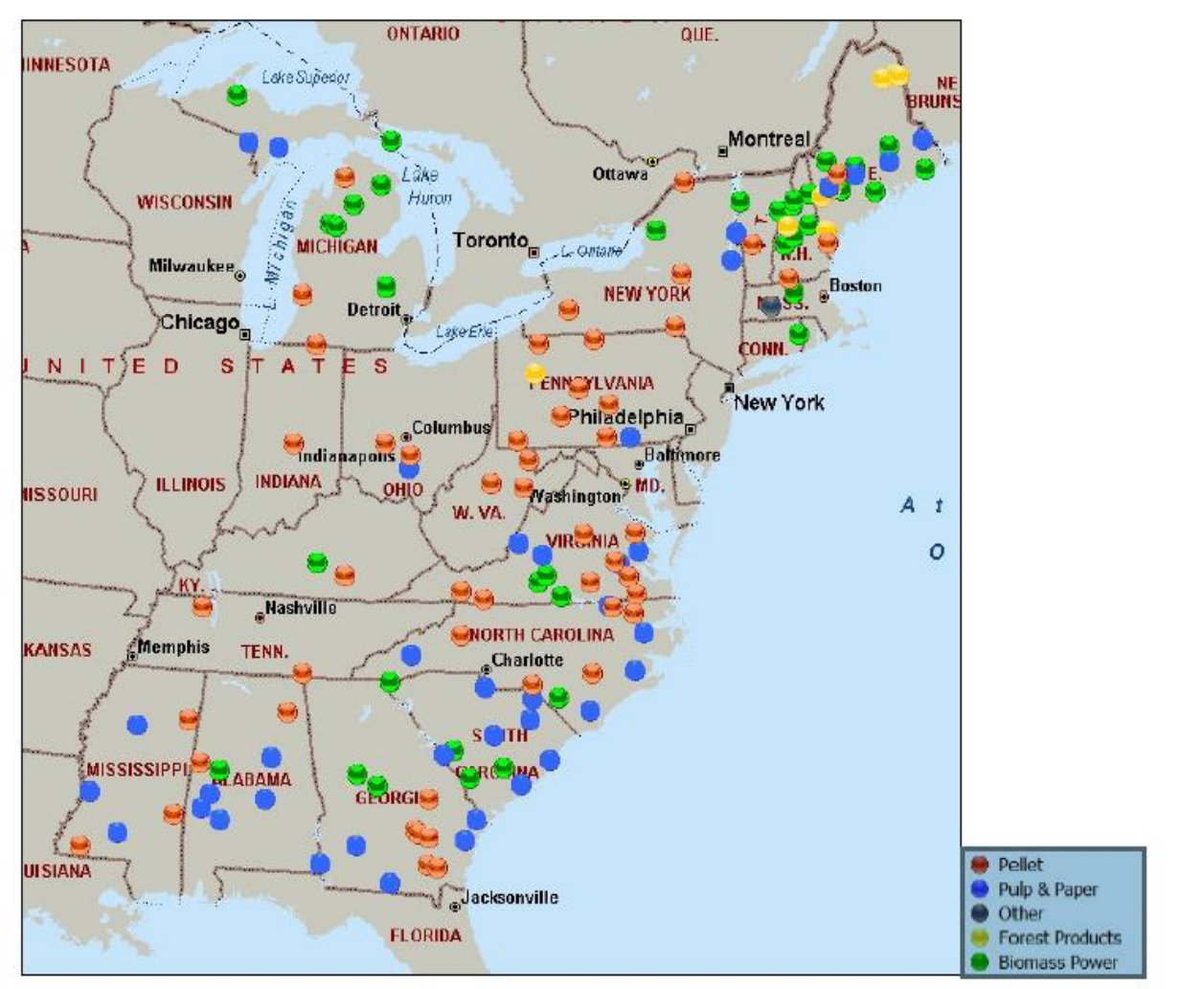
- Complete any remaining MWC work (from 2021).
- Evaluate industrial, commercial, and institutional (ICI) Wood Boiler sector:
  - Develop a refined emissions inventory and compare with the NEI;
  - Collaborate with the MC to assess ozone season impacts from NO<sub>x</sub> and VOCs in the refined inventory;
- Review emission control options for NO<sub>x</sub> and VOCs; and
- Document sector impacts and provide potential recommendations to Air Directors on control options/costs.
- Collaborate with the MANEVU TSC, OTC MC, and OTC MSC to evaluate wintertime contributions to nitrates.

# Complete any Remaining MWC Work

- OTC MWC work is completed.
- Good Neighbor FIP included MWCs in list of non-EGU sources.
- EPA requesting information to update the large MWC NSPS.
  - Emission guidelines for existing sources to be updated in addition to new sources.
  - OTC will submit its MWC report.
- Discussed a modeling analysis with the MC.

# ICI Wood Boiler Inventory Analysis – Large Units

- Large units consist of:
  - Biomass power
  - Pellet plants
  - Paper mills
- Contractor (INRS) completed a draft inventory of units inside and outside the OTR.
  - Workgroup reviewing the inventory, data, and providing inputs.
  - Workgroup cataloging NOx and VOC limits for permitted facilities.



# ICI Wood Boiler Inventory Analysis – Small Units

- Small units consist of:
  - Sawmills
  - Building heat (thermal)
  - Forest products
- Difficult to obtain data on this sector; few facilities have permits.
- Workgroup using a screening-level approach to assess sector “buckets.”
  - Analysis based on fuel use and generic emission factor.
  - If the sector does not contribute significantly during the ozone season, OTC won't further refine the inventory.
  - INRS, NH, and DE developing independent “bucket” analysis.

# Supporting RACT SIP

## **SAS 2022 Charge:**

- Finalize RACT Tool - searchable database of state RACT standards including data from state RACT analysis, control strategies, regulatory limits, and cost-effectiveness.
- Develop OTC recommendations for cost-effectiveness thresholds for presumptive and case-by-case basis RACT.
- Evaluate development of expanded module allowing for comparison of control approaches.

## **Update:**

- RACT cost-effectiveness data has been posted on the OTC website.
- The RACT SIP/Control Measure Tool has been posted on the OTC website.



# RACT Tool version 2

## **Develop policy analysis tool for control measures**

- The intention of V2 was to allow the SAS Committee to estimate emissions reductions from control measures for different sectors.
- The workgroup has tabled this effort because they have concluded that further reductions through RACT are not available.

# Review Modeling Outputs, Inputs, and Conclusions

## **SAS 2022 Charge:**

- Episodic modeling – review findings from episodic modeling work, including sensitivity analysis, and where applicable use these results to inform SAS work.
- ICI wood boiler impacts – provide refined ICI wood boiler inventory information to the Modeling Committee and discuss a potential modeling assessment.
  - Discuss speciation of ICI wood boiler VOC emissions

# Review Modeling Outputs, Inputs, and Conclusions (Continued)

## **Status and next steps:**

- SAS has sent a preliminary ICI wood boiler inventory to the MC to facilitate collaboration on the inventory.
- Will arrange a joint SAS/MC call to discuss the results.
- SAS providing results of building-related NO<sub>x</sub> inventory to the MC and will arrange a joint SAS/MC if needed.

## SAS 2022 Charge:

- Exchange information on areas of mutual interest, including MWC, ICI wood boilers, the RACT Tool, offshore wind permitting, tank farms, and federal ozone rule updates, as identified by SAS and EPA OAQPS.
- Report progress to Air Directors each month.
- Identify opportunities to work with EPA's Emissions Inventory.
- Analysis Group to assess and improve the 2023 NEI.

## Status and next steps:

- Share the RACT SIP/Control Measure Tool and state information on cost-effectiveness with EPA.
- Share additional sector analyses with EPA as appropriate (ICI wood boiler, natural gas boiler, other).

# Additional Focus Areas: Building-Related Emissions

- OTC-NESCAUM conducted a pilot analysis in 2021 for Connecticut that evaluated the potential to reduce NOx emissions from electrification of residential space and water heating appliances.
- This year, the analysis was expanded to all the OTC states. The SAS Committee and directors were briefed on results.
- The SAS Committee will review the draft report in spring. Publication is anticipated in summer.

# Estimate (in tons) of Emissions Reductions with Water and Space Heating Electrification

## Hot Water Heater Conversions

	On-site + Upstream	
	NO <sub>x</sub>	CO <sub>2</sub>
CT	492	640,539
DC	178	108,233
DE	108	165,134
MA	981	1,181,133
MD	638	1,038,847
ME	205	279,109
NH	206	263,365
NJ	1,240	1,511,630
NY	2,739	3,412,063
PA	1,854	2,381,448
RI	159	191,032
VA	912	1,408,415
VT	107	127,781
<b>Sum</b>	<b>9,819</b>	<b>12,708,728</b>

## Space Heating Conversions

	On-site +Upstream	
	NO <sub>x</sub>	CO <sub>2</sub>
CT	5,068	7,336,005
DC	920	594,107
DE	988	1,168,429
MA	9,555	13,631,191
MD	5,333	6,098,905
ME	2,696	4,156,445
NH	2,430	3,463,084
NJ	10,305	14,584,023
NY	25,318	37,254,737
PA	14,846	22,514,625
RI	1,533	2,216,289
VA	6,140	5,406,487
VT	1,273	1,857,849
<b>Sum</b>	<b>86,406</b>	<b>120,282,176</b>

# Discussion/Coordination Between Committees

- Developing a list of top control strategies.
- Continue discussion with MANEVU TSC on wintertime contributions to nitrates (ICI wood boilers, buildings, other).
- Work with the Modeling Committee to assess ozone season impacts from ICI wood boiler emissions, including VOCs.
- Coordinate on the inventory and impact of urban VOCs.
  - Area sources – solvents are the greatest contributor to VOCs in the OTR and may have significant inventory problems.
- Identify opportunities for improvements in emissions estimation methodology.

# Additional Slides



# ERTAC EGU

- Current – v16.3
  - Future years: 2023, 2026, 2028, 2031, 2035, 2038
  - February state outreach
    - Reference case draft results compliance with CSAPR Update/Revised CSAPR Update/Proposed Good Neighbor FIP budgets
      - NJ, NY, PA above the budget AND the variability limit (also IN, KY, LA, MN, OH)
      - MD & VA above the budget but below the 21% variability limit (also AL, MO, VA, WV)
    - Request: New units, retirements, emission rates
    - Comment period through April 15
  - March/April – methods for final GN compliance
  - ~May – release v16.3 final results
- Next – v22.0