The Transition from Research to Policy

An Inventory Perspective

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Overview

- The National Emissions Inventory
- Uses of emissions data for EPA policy
- EPA's inventory process
- Research to policy cycle
- One example

Who creates the EPA inventory?

(except for greenhouse gases)

Office if Air Quality Planning and Standards (OAQPS)

Air Quality Assessment Division (AQAD)

Emissions Inventory and Analysis Group (EIAG)

National Emissions Inventory (NEI)

Health and Environmental Impacts Division

Sector Policies and Programs Division

Air Quality Policy Division

Outreach and Information Division

National Emissions Inventory

- The NEI contains criteria and hazardous air pollutants
  - Point sources (e.g., EGUs and industrial sources)
  - Nonpoint sources – many small individual sources summed to the county (e.g., home heating)
  - Onroad and nonroad mobile sources
- Comprehensive inventory created every 3 years (most recently 2005 and 2008)
- An input to many regulatory activities within OAQPS

Uses of emissions data in OAQPS

- Air quality modeling (e.g., CMAQ)
  - To predict the impact of new National Ambient Air Quality Standards (NAAQS) on future-year air quality
  - To estimate monetary benefits through health impacts to support Regulatory Impact Assessments
  - To directly support rule development for rules such as the Transport Rule, where ozone and $PM_{2.5}$ pollution contribution from one state to another state must be defined
  - As a factor in proposed nonattainment area definitions
  - For State Implementation Plans (SIPs) submitted to OAQPS that describe how states will achieve future compliance with the NAAQS

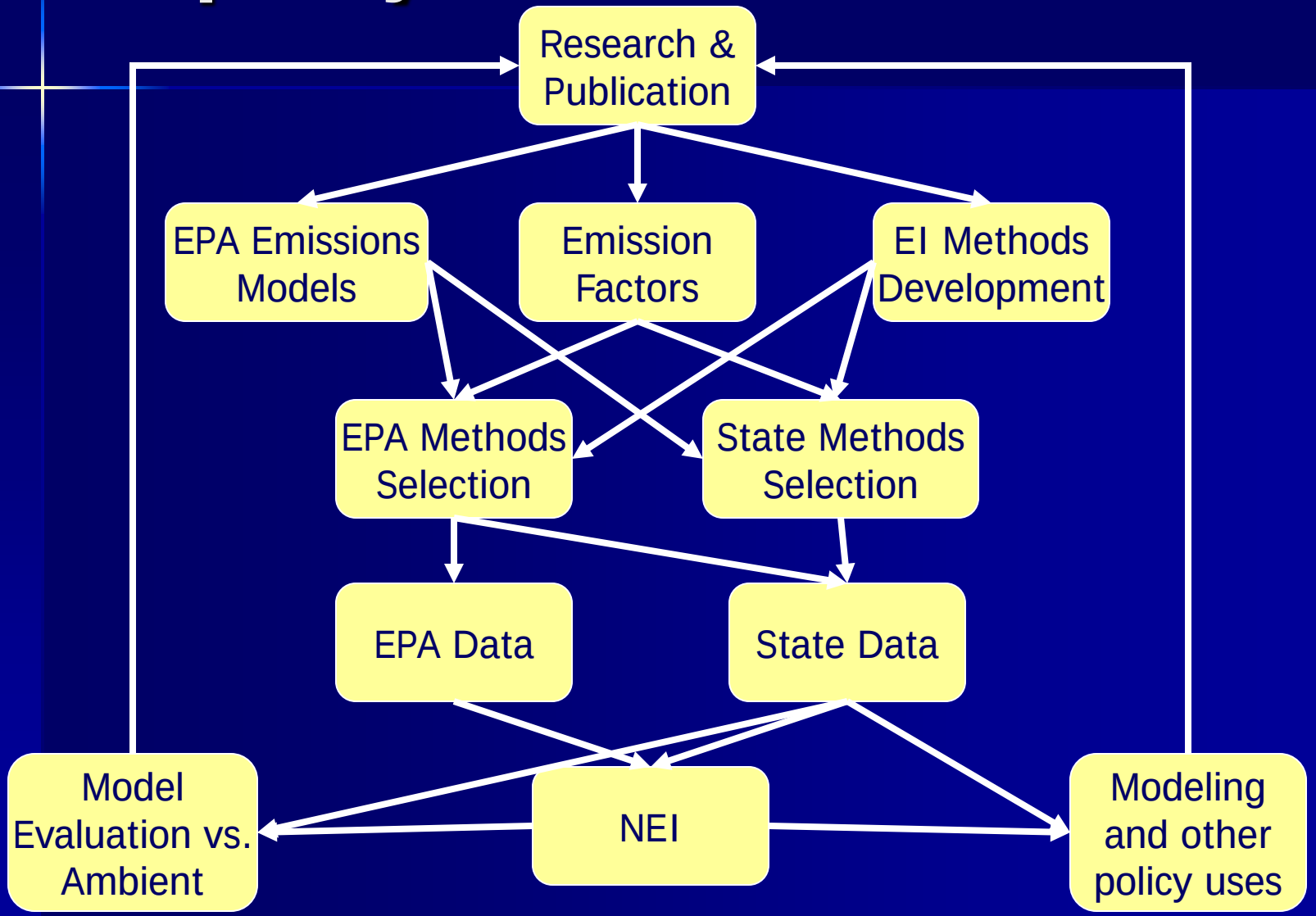
Uses of emissions data in OAQPS (2)

- Source modeling (e.g., AERMOD)
  - To explain potential impacts of some NAAQS such as NO2 and CO for permit modeling
  - To feed risk models
    - Hazardous air pollutant (HAP) regulatory development
    - National Air Toxics Assessment (NATA)
- Directly
  - As a factor in proposed nonattainment area definitions
  - To help define the emissions rates associated with Maximum achievable control technology (MACT) as part of rule development
  - With summaries (e.g., state or industrial sector) as a surrogate for relative contributions to air quality issues for prioritization and understanding
  - To inform the public of success through emissions decreases over time

NEI Development process

- For point and nonpoint emissions, the air quality agencies for states, tribes, and local regions submit their emissions estimates to EPA for compilation and QA
- For most mobile sources, states submit their model inputs for the onroad and nonroad emissions models developed by OTAQ. EPA runs the models.
- S/T/Ls submit some mobile sources not covered by OTAQ models (locomotives, aircraft, commericial marine)
- HAP data submissions are voluntary
- EPA estimates emissions for some categories as a backstop for missing state data and to alleviate the reporting burden for some categories such as EGUs

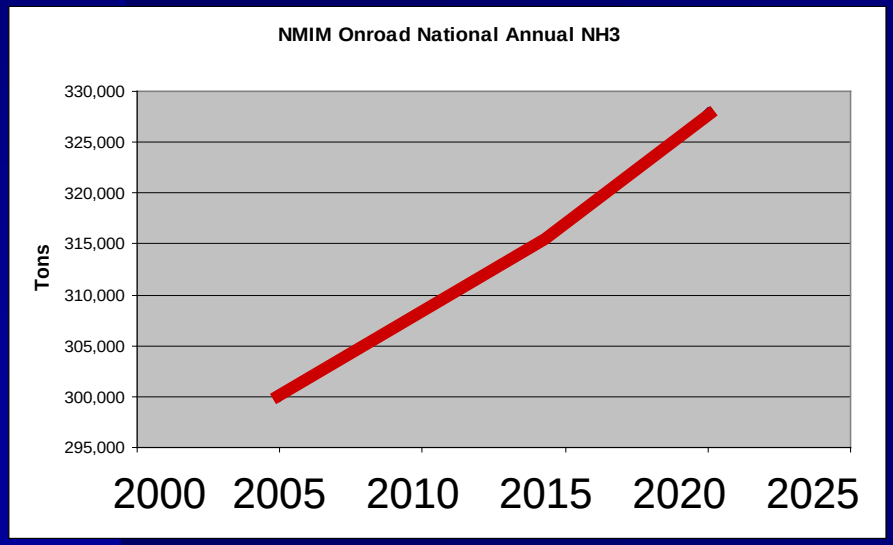
The cycle of emissions research to policy use



Example: Onroad Ammonia

- Issue: Onroad ammonia (NH3) can be a large contributor to total NH3 in urban areas, which can have an impact on $PM_{2.5}$ ambient air quality

Old: Onroad NH3 increases into the future



New: With an emissions factor revision to newer vehicles, onroad NH3 decreases