

# **Proposed Mandatory GHG Reporting Rule: Overview**



**18th International Emission Inventory  
Conference**

**“Comprehensive Inventories – Leveraging  
Technology and Resources”**

**April 14, 2009**



# Appropriations Language



## **FY08 Omnibus Appropriations, signed Dec 26, 2007:**

- “... not less than \$3,500,000 shall be provided for activities to develop and publish a draft rule not later than 9 months after the date of enactment of this Act, and a final rule not later than 18 months after the date of enactment of this Act, to require mandatory reporting of greenhouse gas emissions above appropriate thresholds in all sectors of the economy...”

### Accompanying Explanatory Statement

- The Agency shall "use its existing authority under the Clean Air Act" to develop a mandatory GHG reporting rule. "The Agency is further directed to include in its rule reporting of emissions resulting from upstream production and downstream sources, to the extent that the Administrator deems it appropriate. The Administrator shall determine appropriate thresholds of emissions above which reporting is required, and how frequently reports shall be submitted to EPA. The Administrator shall have discretion to use existing reporting requirements for electric generating units under Section 821 of the Clean Air Act...."

# Source Categories Coverage



**After applying the screening criteria, EPA developed reporting methodologies for emissions source categories found at the following facilities:**

Sector	Reporters
<b>Electricity Generation</b>	Power plants
<b>Transportation</b>	Vehicle and Engine Manufacturers
<b>Industrial</b>	All large industrial emitters, including those in the following industries:
<i>Metals</i>	Iron and Steel, Aluminum, Magnesium, Ferroalloy, Zinc, and Lead
<i>Minerals</i>	Cement, Lime, Glass, Silicon Carbide, Pulp and Paper
<i>Chemicals</i>	HCFC-22, Ammonia, Nitric Acid, Adipic Acid, SF6 from Electrical Equipment, Hydrogen, Petrochemicals, Titanium Dioxide, Soda Ash, Phosphoric Acid, Electronics, Titanium Dioxide
<i>Oil and Gas</i>	Components of oil and gas systems (e.g., Refineries), Underground coal mining
<b>Other</b>	Landfills, Wastewater Treatment, Ethanol, Food Processing
<b>Agriculture</b>	Manure Management
<b>Upstream Suppliers*</b>	Petroleum Refineries, Gas Processors, Natural Gas Distribution Companies, Coal Mines, Importers, Industrial Gases (e.g., HFCs, N <sub>2</sub> O, PFCs, CO <sub>2</sub> )

\*Some upstream suppliers will also be reporting their direct emissions (e.g., refineries)

# Preamble Outline



- Background
  - GHGs, Climate Change, Statutory Authority, Inventory, Other Climate Efforts, etc.
- Summary of Existing Federal, State and Regional Emission Reporting Programs
  - 1605(b), EPA Voluntary and Mandatory Programs, CARB, RGGI, etc.
- General Reporting, Recordkeeping and Verification Requirements
  - Selection of GHGs and Source Categories, Thresholds, Level of Reporting, Monitoring, Reporting, Recordkeeping, Verification, etc.
- Source Category Specific Reporting, Recordkeeping and Verification Requirements
  - 42 subsections
- Collection, Management and Dissemination of GHG Emissions Data
- Compliance and Enforcement
- Economic Impacts
  - Compliance costs, economic impacts, small businesses, etc.
- Statutory and Executive Orders Reviews

# Proposal Summary

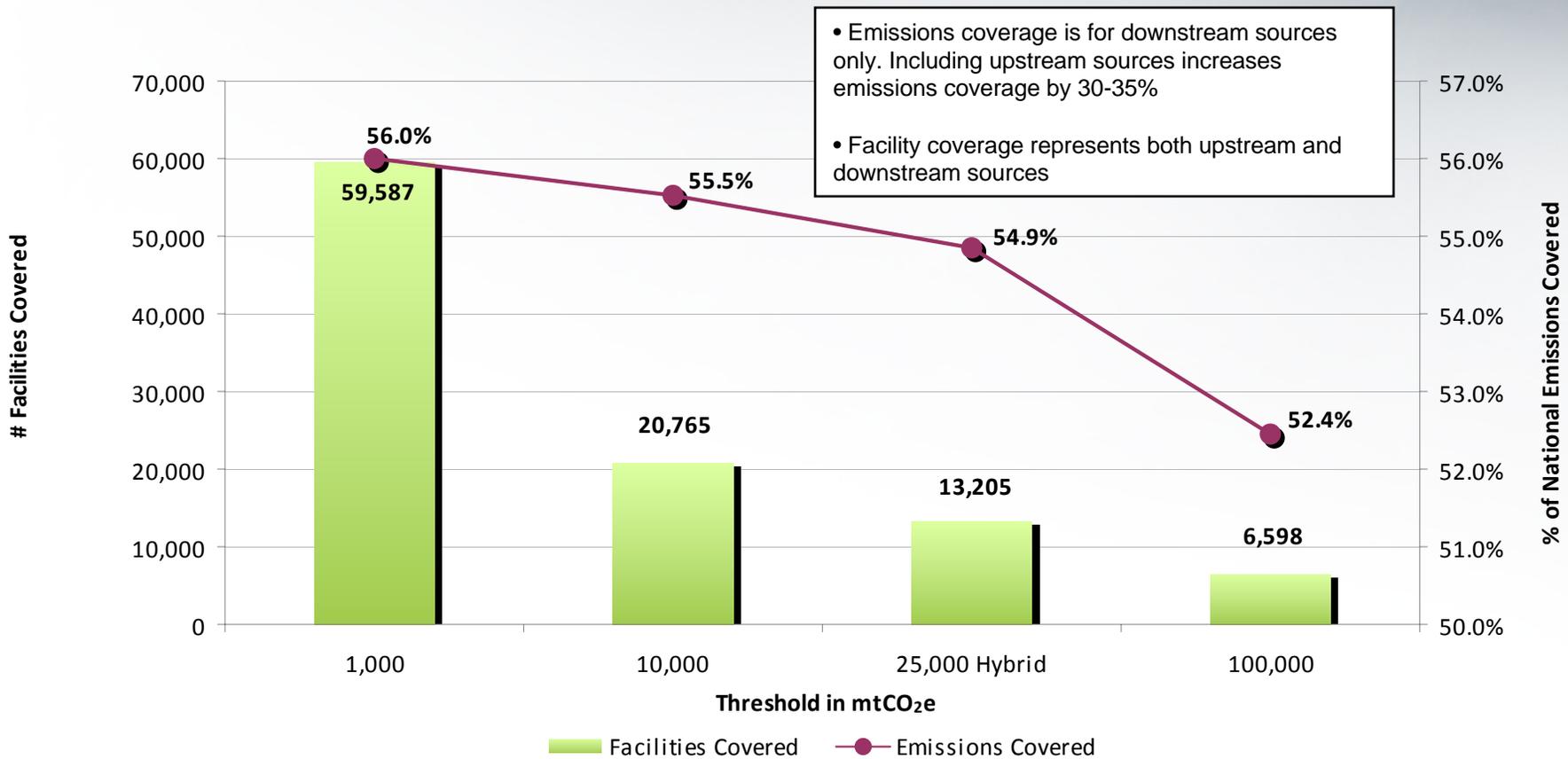


- Reporter: Hybrid approach
  - Facility based reporting for all source categories for which there are methods
  - Limited exceptions for a few reporters (e.g. fuel importers, vehicle and engine manufacturers)
- Threshold: Hybrid approach
  - A facility that meets the emissions threshold of 25,000 tons CO<sub>2</sub>e reports all source categories for which there are methods in the rule
  - May develop capacity thresholds where feasible (e.g., ARP)
- Methodology: Hybrid approach
  - Direct measurement of stationary combustion source categories where data currently collected (e.g., CO<sub>2</sub> emissions from EGUs in ARP)
  - Facility-specific calculation methods for other source categories at the facility
- Frequency: Annual
  - Annual for new reporters
  - Facilities already reporting similar data more frequently to other mandatory programs (e.g., Acid Rain Program) continue current practice
- Verification: EPA as the verifier
  - Reporter self-certifies emissions data and other specified activity data and submits to EPA who performs QA/QC of reports

# Estimated Proposal Coverage



Downstream Facility and Emissions Coverage by Threshold



# For more information



- Preamble and proposed regulatory text available at: [www.regulations.gov](http://www.regulations.gov) after publication in the Federal Register
- Instructions for submitting written comments found in preamble: [www.regulations.gov](http://www.regulations.gov)
- Additional information:  
[www.epa.gov/climatechange/emissions/ghgrulemaking.html](http://www.epa.gov/climatechange/emissions/ghgrulemaking.html)  
Hotline: 1-877-GHG-1188  
Email: GHGMRR@epa.gov

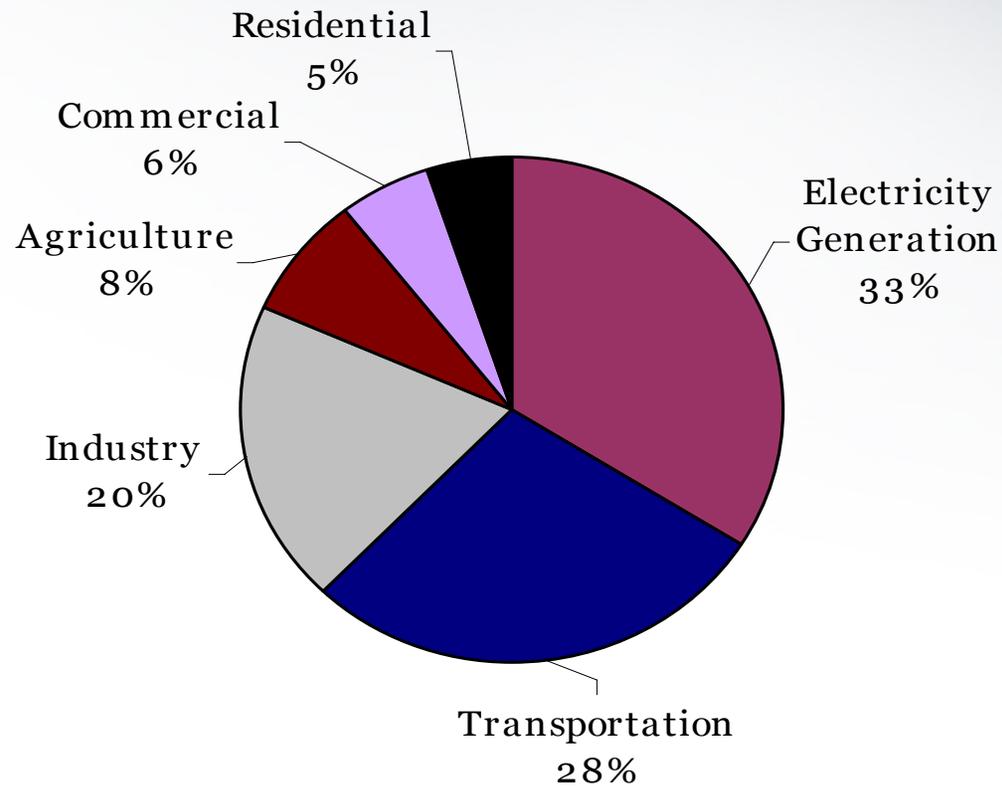


# **Additional Slides**

# U.S. GHG Emissions (2006)



## Emissions (CO<sub>2</sub>e) Allocated to Economic Sectors



Source: *Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2006* (April 2008)

# Rulemaking Approach



1. Start with anthropogenic emission sources in the U.S. GHG Inventory and IPCC Guidelines
2. Review existing methodologies and reporting programs (e.g., CARB, Acid Rain Program/RGGI, The Climate Registry, 1605b, Climate Leaders, fuel quality and vehicle programs, etc.)
3. Apply screening criteria to identify source categories to be included in the rule:
  - Could be covered under the Clean Air Act
  - Ability to measure
  - Administrative burden
    - Number of reporters vs. coverage of emissions
4. Develop reporting methodologies for selected emission source categories
5. Established cross-Agency workgroup to develop rule
  - 8 technical groups (by source category)
  - Over 100 workgroup members
  - Nearly every office within EPA represented (OAR, OGC, OECA, OPEI, OEI, OW, OSWER, OPPTS, etc.)

# Outreach meetings held



- Meetings held with over 250 different groups including:
  - States, state- or regional-based groups: CA, CT, NM, SCAQMD, TCR, NACAA, ECOS, WCI, RGGI
  - Tribes: Tribal Air Caucus, National Tribal Air Assoc.
  - Trade Associations: Edison Electric Institute, American Chemistry Council, Portland Cement Assoc., National Petrochemical & Refiners Assoc., American Trucking Assoc., Alliance of Automobile Manufacturers, National Mining Assoc, American Farm Bureau Federation, American Forests and Paper Assoc.
  - NGOs: WRI, NRDC, Pew

# Key Aspects of Proposal



- Who reports
- Thresholds
- Reporting methodology
- Frequency
- Verification

# Who Reports



- Who reports in the range of current programs?
  - Most mandatory reporting programs have facility-level or unit-level reporting (e.g., CA, EU ETS, TRI, NEI, etc.)
  - Most voluntary GHG programs have corporate-level reporting, but encourage facility-level reporting (e.g., Climate Leaders, TCR)
- Who is the appropriate reporter for a mandatory reporting program?
  - When reported at facility-level, data can be aggregated to corporate-level but disaggregating from corporate-level to facility-level data is more difficult
  - Relying exclusively on corporate-level reporting would minimize usefulness of data for developing new policy or implementing current CAA programs (e.g., NSPS, NSR)
  - EPA would need to define organizational boundaries for corporations (i.e., equity share or control approaches)
  - Frequent changes in corporate structure and ownership over time could make data from particular facilities difficult to track
  - A threshold at the corporate level would likely encompass more and smaller facilities than if thresholds applied at the facility level
- Should the reporter be uniform for all source categories in the program?
  - Could be difficult to define facility for all reporters (e.g., importers)

**Proposal: Hybrid- Primarily facility, with limited exceptions (e.g., fuel importers, vehicle and engine manufacturers)**

# Thresholds



- What is the form of the threshold?
  - Capacity, Emissions, Hybrid
- What is the level of an emissions threshold (in CO<sub>2</sub>e)?
  - 1,000 tons, 10,000 tons, 25,000 tons, 100,000 tons, etc.
  - Proposing lower thresholds will likely increase pressure for less rigorous measurement methods
- What data are available to support the threshold determination?
- Examples of existing GHG programs:
  - CARB uses a hybrid approach
    - 25,000 tons of CO<sub>2</sub>e for most source categories
    - Capacity or other for specific source categories (e.g., electricity generation, oil refineries)
  - EU uses a capacity approach
    - Each source category has a specific capacity threshold (e.g., 500 tons of clinker/day for cement facilities)
- Relationship between level of threshold and rigor of monitoring method
  - Proposal of a lower threshold could increase pressure to use less rigorous monitoring methods.

## **Proposal:**

- **Capacity-based threshold, where appropriate and feasible**
- **Emissions-based threshold of 25,000 metric tons of CO<sub>2</sub>e/yr for other sources**

# Methodologies - Background



- What types of methodologies are available for calculating GHGs?
  - Direct measurement
  - Facility-specific calculation (i.e., calculations based on periodic sampling/testing at a facility)
  - Simplified methods using default factors
- What are the sources of methods currently in use?
  - EPA, IPCC, WRI/WBCSD , industry, States, voluntary programs (e.g., TCR)
- Examples from existing GHG programs:
  - CARB uses a hybrid approach of direct measurement and facility-specific calculations
  - 1605(b) offers a range of choices from direct measurement to mass balance calculation with default emissions factors

# Proposed Methodologies



- **Hybrid of direct measurement, where available, and facility-specific calculation for other sources**
  - Use direct measurement of emissions where facilities already reporting and collecting (e.g., Acid Rain Program) and facility-specific calculations for other source categories
    - Relatively high certainty of data, takes advantage of existing practices at facilities
    - Minimizes incremental cost of proposal
  - Generally, vehicle/engine manufacturers would use existing certification and test protocols
  - Industrial gas suppliers use direct reporting of gas produced, imported and exported
- **EPA direct reporting system for fuel quantity and quality information**
  - Facilities report all information directly to EPA
  - More consistent with approach for direct emitters (e.g., timing, verification, definitions of facilities etc.)

# Frequency



- What is the frequency of reporting in the range of current policies and programs?
  - Most regulatory programs require quarterly reporting in order to provide necessary feedback to facilities and, in the case of cap & trade, the market (e.g., Acid Rain Program, fuel quality data in OTAQ, Title VI)
  - TRI is a mandatory but non-regulatory annual requirement
  - Most voluntary programs tend to require annual reporting to be less burdensome (e.g., Climate Leaders, 1605(b), EPA's non-CO2 programs)
- What is the appropriate frequency for a mandatory reporting program?
- Should the frequency be uniform for all source categories in the program?

## **Proposal: Annually for New Reporters**

- **Exception: Those facilities already reporting quarterly for existing mandatory programs (e.g., Acid Rain Program) will continue to report quarterly**
- **Data collection begins January 1, 2010 with first reports submitted to EPA March 31, 2011.**
  - **Preamble discusses other options if the final rule is not published in sufficient time to enable complete reporting of 2010 data using the methods described in the rule.**

# Verification



Verification Type	Pros	Cons
EPA verification	<ul style="list-style-type: none"> <li>•Timely QA/QC data available to reporters, public, etc.,</li> <li>•EPA retains control of data</li> <li>•Lower costs for reporters</li> <li>•Highest EPA and stakeholder confidence in data</li> <li>•EPA/States are usual CAA verifiers</li> </ul>	<ul style="list-style-type: none"> <li>•Requires more data from reporters, and more data management for EPA</li> <li>•Start-up costs for EPA to develop QA/QC and auditing system</li> <li>•Requires sustained financial and human resources to handle large amounts of data in timely fashion</li> <li>•Requires procedures for handling CBI</li> </ul>
Third-party verification	<ul style="list-style-type: none"> <li>•Similar to some other GHG mandatory programs (e.g., CARB, EU ETS)</li> <li>•Could be a way to alleviate some CBI concerns</li> </ul>	<ul style="list-style-type: none"> <li>•Requires more time for data to reach EPA</li> <li>•Less transparency in data</li> <li>•Costs to EPA to certify verifiers and audit reports</li> <li>•Potential inconsistencies</li> <li>•Highest costs for reporters</li> <li>•Potential conflicts of interest between verifier and reporter</li> <li>•Strong industry opposition</li> </ul>
No verification	<ul style="list-style-type: none"> <li>•Lowest cost to reporters and EPA.</li> </ul>	<ul style="list-style-type: none"> <li>•Lowest EPA and stakeholder confidence in data</li> <li>•Significant changes would be required in any transition to a regulatory program.</li> </ul>

## **Proposal: EPA as verifier**

- **Reporter self-certifies emissions data and other specified activity data and submits to EPA who performs QA/QC of reports; EPA takes enforcement action for non-compliance**
- **Consistent with most EPA Programs**
  - Some OTAQ fuels programs require additional annual audit of reporting parties' records by independent auditor

# Approach to Mobile Sources (1)



- Vehicle and engine manufacturers
  - Through EPA's long-standing testing and certification requirements for criteria emissions and fuel economy, EPA already has a structure for receiving emission data from manufacturers.
  - CO<sub>2</sub> is almost universally measured as a part of vehicle and engine certification. CARB also requires all manufacturers to report CO<sub>2</sub> measured during their certification emission tests to facilitate improvements in CA's GHG emissions inventory.
  - CH<sub>4</sub>, N<sub>2</sub>O and air conditioning HFC emissions are rarely measured and reported today.

## **Proposal:**

- **Expand existing emission reporting requirements to include CO<sub>2</sub>, CH<sub>4</sub>, N<sub>2</sub>O and HFCs for new vehicles and engines.**
  - Emissions would be reported as a rate (e.g. grams/mile) similar to our existing requirements
  - Would provide consistency in CO<sub>2</sub> reporting requirements across all vehicle and engine categories
  - Modest new requirements for measuring and reporting CH<sub>4</sub>, N<sub>2</sub>O and HFCs
    - HFC reporting would be primarily limited to light duty vehicles
- **Manufacturers would report annually, at time of current annual certification**
- **Propose that small manufacturers would not have to report**

## Approach to Mobile Sources (2)



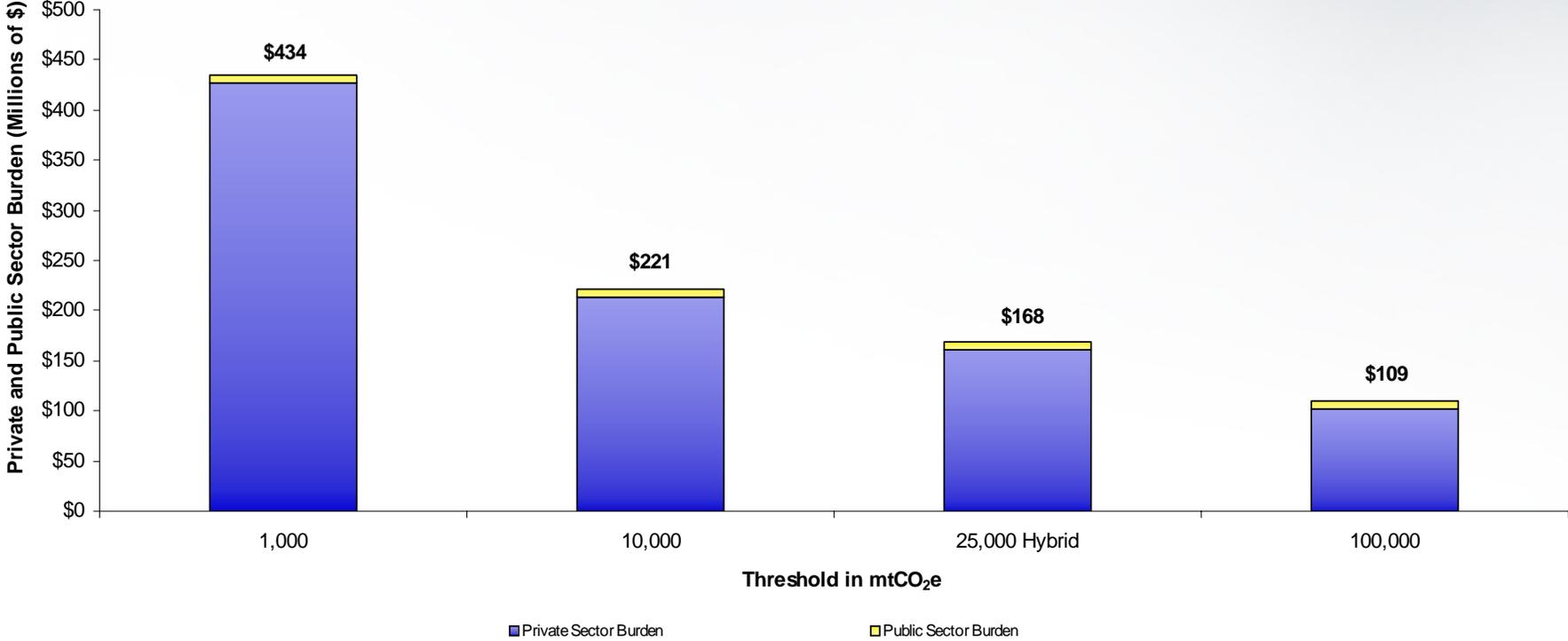
- Fleets and VMT/travel activity data
  - Reviewed options for collecting fleet-wide, in-use emissions data to complement manufacturer data.
  - EPA already receives some truck and rail fleet emissions data voluntarily via the SmartWay program and some county-level travel activity data and other mobile source data from states via the Air Emissions Reporting Rule.

**Proposal:** Not proposing any new requirements; only seeking comment on collecting additional emissions and activity data from fleets and state and local governments.



# Estimated Proposal Costs

First Year National Costs by Threshold (Millions of \$)



# Appendix A: CAA Section 114



- **Recordkeeping, inspections, monitoring and entry:** For the purpose of “...(iii) carrying out any provision of this chapter...(1) The Administrator may require any person who owns or operates any emission source, who manufactures emission control equipment or process equipment, who the Administrator believes may have information necessary for the purposes set forth in this subsection, or who is subject to any requirement of this chapter (other than a manufacturer subject to the provisions of section 7525(c) or 7542 of this title with respect to a provision of subchapter II of this chapter) a one-time, periodic or continuous basis to-(A) establish and maintain such records; (B) make such reports; (C) install, use and maintain such monitoring equipment and use such audit procedures, or methods; (D) sample such emissions (in accordance with such procedures or methods, at such locations, at such intervals, during such periods and in such manner as the Administrator shall prescribe); (E) keep records on control equipment parameters, production variables or other indirect data when direct monitoring of emissions is impractical; (F) submit compliance certifications in accordance with subsection (a)(3) of this section; and (G) provide such other information as the Administrator may reasonably require.”

# Appendix B: CAA Section 208



- **Information Collection:** “ Every manufacturer of new motor vehicles or new motor vehicle engines, and every manufacturer of new motor vehicle or engine parts or components, and other persons subject to the requirements of this part or part C of this subchapter, shall establish and maintain records, perform tests where such testing is not otherwise reasonably available under this part and part C of this subchapter, make reports and provide information the Administrator may reasonably require to determine whether the person has acted or is acting in compliance with this part and part C of this subchapter and regulations thereunder, or to otherwise carry out the provision of this part and part C of this subchapter, and shall, upon request of an officer or employee duly designated by the Administrator, permit such officer or employee at reasonable times to have access to and copy such records.”