GHG PSD Permitting Developments

CIBO Annual Meeting

Williamsburg, Virginia

October 22, 2010

Presentation Outline

- Issue Overview
- GHG PSD Background
- Tailoring Rule
- State SIPs and FIPs for GHGs
- Development of GHG BACT Guidance
- Key Issues for CIBO Members
- Example: Boiler Retubing Project

Issue Overview

- What is issue?
  - As a result of several recent rules, GHGs are now regulated pollutants under the CAA, and under certain circumstances major sources will trigger PSD for GHGs
- Why should CIBO members care?
  - If you trigger GHG PSD, you must evaluate BACT options; states have no experience with GHG BACT, no traditional controls are available; and significant permit delays or even *de facto* construction bans are likely as states address this new program
- What are we doing?
  - Advocacy on multiple fronts: litigation (very confused at this point); Congressional action; EPA Clean Air Act Advisory Committee; direct meetings with EPA; meetings with OMB

Rulemaking Background

- EPA Endangerment Finding
  - Response to Supreme Court decision; determination that 6 GHGs endanger human health & welfare, and mobile source emissions "cause or contribute" to this endangerment
  - What it does: no separate regulatory implications, but 1st step towards making GHGs regulated pollutants
- EPA Light Duty Vehicle Rule
  - March 31 final rule sets LDV tailpipe standards for GHGs
  - What it does: when paired with endangerment finding, makes GHGs regulated pollutants for all sources, not just mobile
- Johnson Reconsideration Rule
  - March 29 final rule affirms PSD isn't triggered until a national rule requires actual controls
  - What it does: says that GHG PSD isn't triggered until 1/2/2011

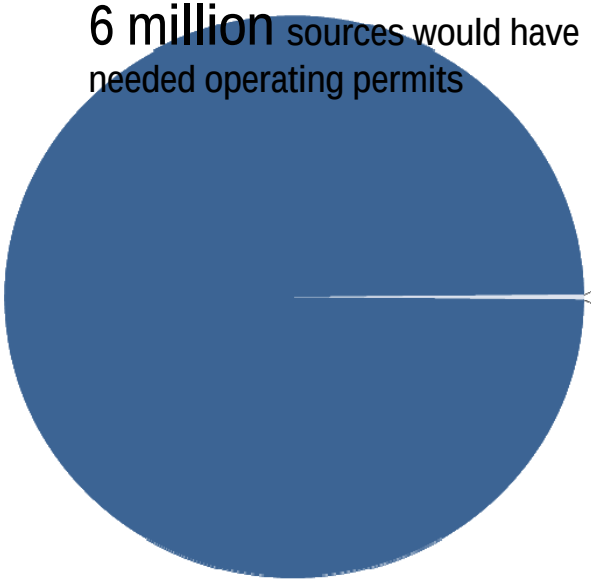
EPA "Tailoring" Rule for GHG PSD & Title V Permitting

- June 3rd final rule raises statutory major source threshold for PSD and Title V from 100/250 tons/year to 100,000 tons by defining the term "subject to regulation"; PSD significance threshold raised to 75,000 tons. Regulation of smaller sources to be deferred up to 6 years
- Rationale for changing statutory thresholds: absurd results and administrative necessity; program will still cover 70% of stationary source GHG emissions
- Rule also addresses what happens if states can't or won't administer a GHG program: EPA will take over and run the program for the states

Operating Permits Burden Reductions

Without the Tailoring Rule

6 million sources would have needed operating permits

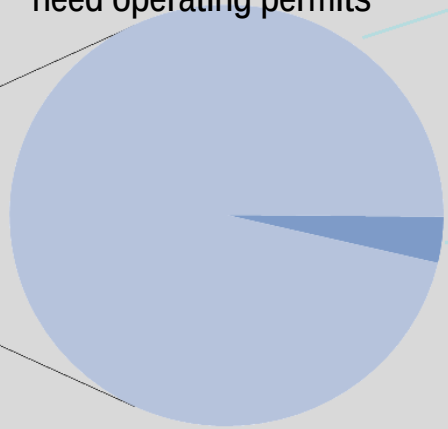


78% of total national stationary source GHG emissions would be covered

$21 billion annual cost to permitting authorities

With the Tailoring Rule

Only 15,550 sources will need operating permits



15,000 sources already have operating permits

Only 550 More sources Will be subject to Operating permitting For GHGs alone- but not until More than a year from now

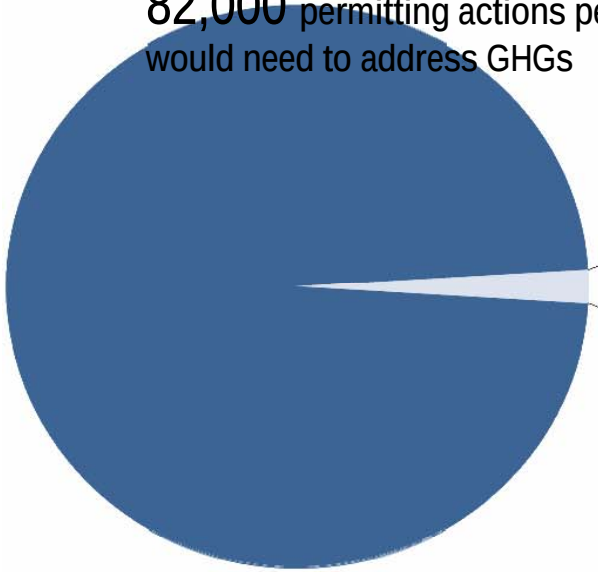
67% of total national stationary sources GHG emissions are associated with facilities where actions could have occurred

$69 million annual cost to permitting authorities

PSD Permitting Burden Reductions

Without the Tailoring Rule

82,000 permitting actions per year would need to address GHGs

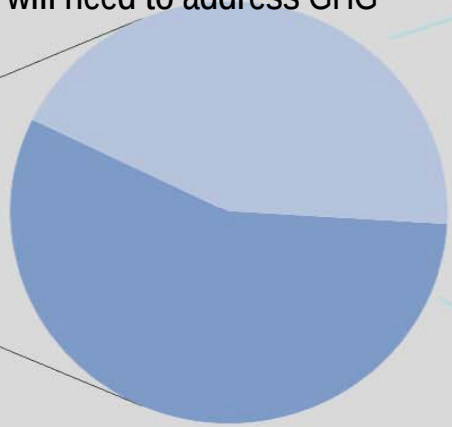


78% of total national stationary sources GHG emissions are associated with facilities where actions could have occurred

$1.5 billion annual cost to permitting authorities

With the Tailoring Rule

Only 1,600 permitting actions per year will need to address GHG



700 permitting actions that would already occur will need to address GHGs

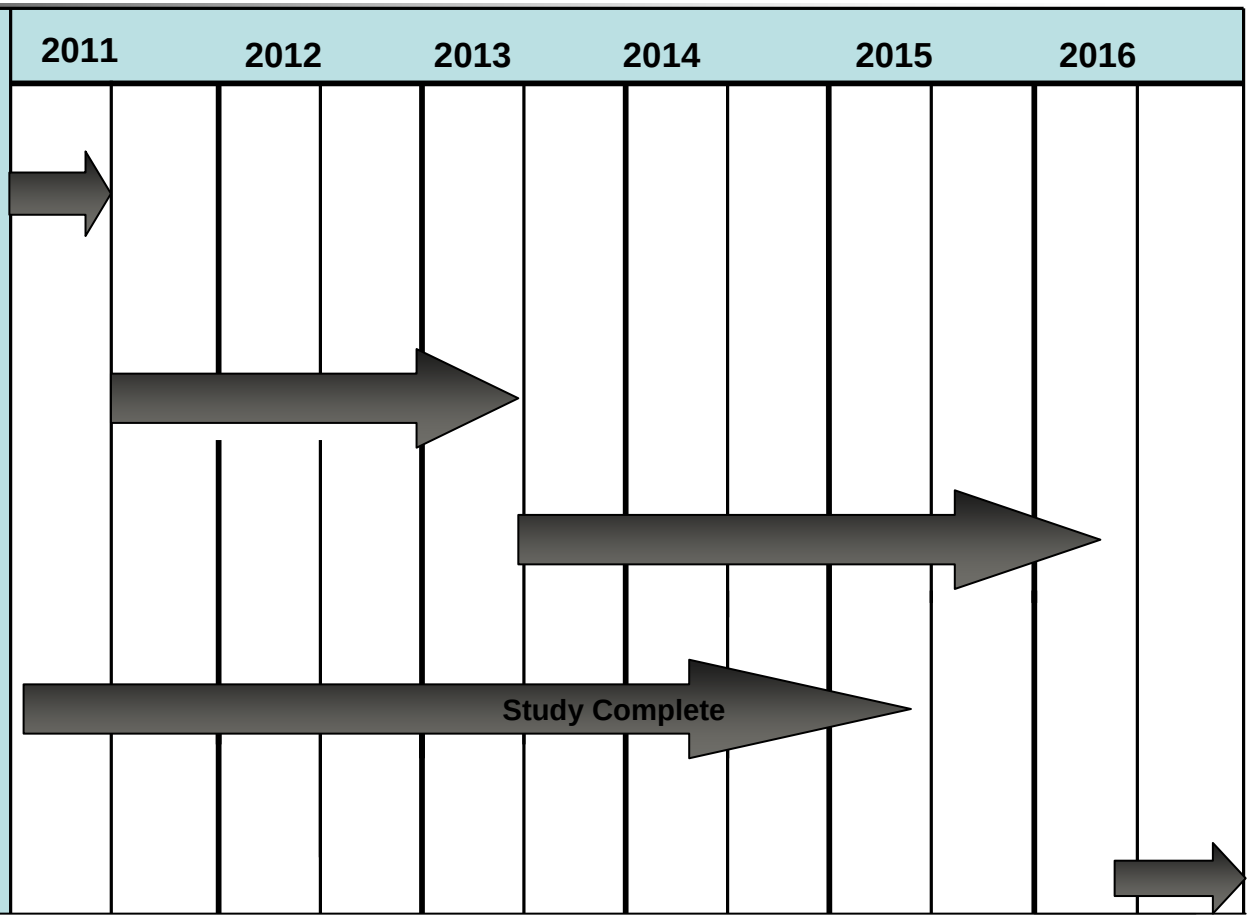
900 more permitting actions will occur to address GHGs – but not until more than a year from now

67% of total national stationary sources GHG emissions are associated with facilities where actions could have occurred

$69 million annual cost to permitting authorities

Permitting Steps under the Tailoring Rule

- **Step 1**: Source already subject to PSD "anyway" (tpy CO_2e)
  New source: NA
  Modification: 75,000
- **Step 2**: Sources already subject to PSD (tpy CO_2e)
  New source: 100,000
  Modification: 75,000
- **Step 3**: Implementation of potential additional phase-in and streamlining options
- **5 year study**: To examine GHG permitting for smaller sources
- Implementation of rule based on 5-year study



Tailoring Rule Permitting Issues

- In the final rule, EPA has defined the term “subject to regulation” as a way to facilitate rapid implementation of new, higher permitting thresholds by states
- EPA asked states to submit information on whether revisions to statutes or regulations is necessary to address GHG under their PSD and Title V programs, and if so on what schedule
- Transition issues:
  - Final PSD permits issued before 1/2/11 do not have to be reopened
  - Sources with permission to construct but that haven’t commenced construction on 1/2/11 may proceed without opening their PSD permit to address GHGs
  - Major GHG sources must commence construction before 7/1/11 to avoid a GHG PSD permit

EPA Steps to Get States Ready to Implement GHG PSD—SIP Calls & FIPs

- On September 2, EPA issued 2 proposed rules addressing how states & EPA will meet their obligations to implement a GHG PSD and Title V program
- 13 states are identified as having programs inadequate to apply PSD to GHG sources, and must submit SIP revisions or be subject to a FIP:
  - Alaska, Arizona, Arkansas, parts of California, Connecticut, Florida, Idaho, Kansas, Kentucky, Nebraska, part of Nevada, Oregon, Texas

GHG PSD SIPs & FIPs

- Why this is of interest: if a state doesn't have authority to regulate GHGs, sources in that state will be unable to get a GHG PSD permit and " may be unable to proceed with planned construction or modification in those states" (FR page 53895). As EPA staff has put it, a de facto construction ban.

EPA Plans for SIPs & FIPs

- EPA will finalize the 9/2 rulemaking on 12/1
- States may take up to a year to submit an acceptable SIP revision, but may take as little as 3 weeks (EPA's preference). Several options then play out:
  - EPA will issue a SIP call on 12/22 for states without authority to regulate GHGs or those that haven't responded
  - EPA will work expeditiously with states that have submitted SIP revisions to get them approved quickly
  - EPA encourages states that won't be ready in time to ask for a "friendly FIP", where EPA will issue GHG PSD permits but will work cooperatively with the states
  - Otherwise, EPA will have to wait up to a year to issue a FIP
  - Until a FIP is in place or a SIP revision is approved, states will not be able to issue PSD permits

GHG BACT—CAAAC Consideration

- EPA's Clean Air Act Advisory Committee has provided the Agency with 2 reports detailing how GHG BACT might work and how it can be used to encourage energy efficient processes and technologies. Consensus recommendations included:
  - Energy efficiency projects should be considered as BACT, but will be difficult to translate into permit terms; consider with traditional controls, inherently less-polluting processes
  - EPA should encourage innovation through use of a waiver program
  - Format of BACT limits should be flexible: performance standard, typical emission limit, work practice, design requirement
  - Traditional PSD approaches should be allowed—netting, synthetic minors, actuals to future actuals comparison, demand growth, etc.
  - States need a variety of guidance—updated RACT/BACT/LAER clearinghouse; ORD climate mitigation database; sector-specific white papers

GHG BACT—CAAAC Consideration

- CAAAC areas of non-consensus or non-discussion:
  - Scope of the source to which BACT is applied
  - Role of fuel switching
  - GHG cost-effectiveness thresholds
  - Whether pay-back periods should be considered
  - Whether CO2 emissions from biomass combustion should be considered as part of a BACT analysis
  - How one could “net out” of PSD when employing energy efficiency projects

EPA GHG BACT Actions

- RACT/BACT/LAER Clearinghouse will be updated; will have direct links to permit applications & final permits
- ORD GHG Mitigation database: focused now on EGUs, large boilers, cement, but will be expanded to other sources
- 7 technical white papers (EGUs, ICI boilers, pulp & paper, refining, iron & steel, cement, nitric acid production); BACT will not be prescribed in any way, just an information source
- GHG BACT guidance: now at OMB; will be noticed on EPA NSR website; will be brief, informal comment period; will address issues raised by CAAAC; will not address biomass CO2 neutrality; assumes GHGs are really no different than criteria pollutants for PSD purposes
- Workshops and webinars following release of guidance; will start with EPA regions, then states; webinars will be for other stakeholders

Real GHG BACT Issues

- Netting out of GHG PSD
  - Setting baseline
  - Calculating GHG emission reductions from energy efficiency projects
  - Getting credit for reduced electricity usage (improved fans, pumps; CHP)
  - Extra credit for reductions of GHGs with higher “global warming potential” (methane, N2O)
  - Monitoring & reporting
  - Making energy efficiency project reductions quantifiable, enforceable, and permanent (equipment performance may degrade)

Real GHG BACT Issues

- Breadth of BACT analysis
- Cost-effectiveness thresholds
- In BACT analysis, balance between maximizing energy efficiency and factors like product quality, reliability, and process stability
- How to treat GHG BACT energy efficiency project that increases criteria pollutants (installing pre-heaters)
- Other CAA requirements that trigger GHG BACT (boiler MACT)
- Biomass combustion disadvantaged if CO2 emissions not considered neutral
- Likelihood of delays as states grapple with GHGs and new NAAQS

Hypothetical Boiler Retubing Project

- Coal-fired boiler with 270,000 ton CO2e/yr; operating at 50% load; want to restore capability (135,000 ton increase triggers GHG PSD)
- Issues:
  - Cost-effectiveness threshold critical to know. Fuel switching to natural gas (43% reduction) if threshold is $1000/ton costs $441 million, at $100/ton $44 million, at $10/ton $4.1 million. Energy efficiency project with 7% CO2e reduction costs $53 million at $1000/ton, $5.3 million at $100/ton, $530K at $10/ton—what are we shooting at

Hypothetical Boiler Retubing Project

- Issues:
  - Breadth of facility—are we just looking at the boiler, or beyond?
  - How will BACT be addressed in your permit—emission limit, work practice, performance standard, installation of specific equipment combined with work practices?
  - What will you be monitoring for your new, efficient BACT boiler, and what's the averaging time?
  - Increases in criteria pollutants: if you install a preheater as part of an energy efficiency upgrade, you may trigger BACT for NOx and CO—should the preheater be eliminated from consideration?
  - If your new, efficient BACT boiler goes down (malfunction, scheduled maintenance) and you increase utilization of older, less efficient boilers, is this an issue?
  - Will your local ENGO nit-pick your BACT determination and slow down permit issuance?