

BEST AVAILABLE CONTROL TECHNOLOGY FOR GREENHOUSE GASES

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What I Will Cover in This Talk

- Background
 - ◆ Supreme Court Decision
 - ◆ Endangerment Finding
 - ◆ Johnson Memorandum
 - ◆ Light Duty Vehicle GHG Emissions Rule
 - ◆ Tailoring Rule
- Clean Air Act Advisory Committee GHG BACT Workgroup
 - ◆ Phase I report
 - ◆ Phase 2 report
- ◆ EPA guidance and training

Supreme Court Decision

- April 2, 2007— In *Massachusetts v. EPA*, the Supreme Court found that greenhouse gases are air pollutants covered by the Clean Air Act
- EPA was required to determine whether:
 - GHG emissions from new motor vehicles cause or contribute to air pollution;
 - This air pollution may reasonably be anticipated to endanger public health or welfare
- ◆ The Court gave EPA three options on endangerment: Yes, No, or the science is too uncertain to make a reasoned decision
- Endangerment finding is a prerequisite for using section 202 of the Clean Air Act to regulate GHGs

EPA Endangerment Finding

- December 7, 2009 –Administrator issued two distinct findings regarding greenhouse gas emissions under section 202(a) of the Clean Air Act
 - **Endangerment Finding:** Current and projected concentrations of the mix of six key greenhouse gases in the atmosphere threaten the public health and welfare
 - **Cause or Contribute Finding:** Combined emissions of CO₂, CH₄, N₂O, and HFCs from new motor vehicles and motor vehicle engines contribute to the atmospheric concentrations of these key greenhouse gases and hence to the threat of climate change

Johnson Memorandum

- The permitting requirements of the CAA's Prevention of Significant Deterioration ("PSD") program apply only to newly constructed or modified major sources that emit one or more pollutants "subject to regulation."
- On March 29, 2010, EPA issued a final rule affirming the Johnson Memorandum's interpretation that PSD permitting requirements are not triggered for a pollutant such as a GHG until a final nationwide rule requires actual control of emissions of the pollutant.
- EPA expanded the Johnson Memorandum's "subject to regulation" trigger to the Title V permitting program.

Light Duty Vehicle Rule

- Released on April 1, 2010, the Light Duty Vehicle Rule (“LDVR”) is EPA’s first national emissions standard to control GHG emissions from passenger cars and light duty trucks.
- The first GHG standards under the LDVR take effect when the 2012 model year begins, which is no earlier than January 2, 2011.
- On that day, the LDVR will make GHGs “regulated pollutants” under EPA’s interpretation, which, according to the Johnson Memorandum, will trigger PSD and Title V permitting requirements for all GHG-emitting stationary sources.

Tailoring Rule Step 1

(January 2, 2011 – June 30, 2011)

- During the first six-months, no sources would be subject to permitting requirements due solely to GHG emissions.
- Only sources that would be otherwise subject to PSD requirements (*i.e.*, sources that are newly constructed or modified in a way that significantly increases emissions of a pollutant other than GHGs) may be subject to permitting requirements for their GHG emissions. Further, these sources would only need to go through a GHG BACT analysis if their GHG emissions increase by 75,000 tpy or more.
- Similarly, only sources currently subject to Title V (*i.e.*, major sources for a pollutant other than GHGs) will be subject to Title V requirements for GHGs.

Tailoring Rule Step 2

(July 1, 2011 – June 30, 2013)

- PSD requirements will apply to modifications at existing facilities if the modification increases GHG emissions by at least 75,000 tpy, even if the modification does not exceed the significance threshold of any other pollutant. New construction projects will trigger permitting requirements if the facility will emit at least 100,000 tpy of GHGs, even if the project does not exceed the permitting threshold for any other pollutant.
- Title V operating permits will apply to facilities that emit at least 100,000 tpy of GHGs, even if the source does not exceed the significance threshold for any other pollutant.

Tailoring Rule Step 3

EPA Commitments

- ◆ To further rulemaking beginning in 2011 and concluding by July 2012
- ◆ To undertake a study evaluating the status of GHG permitting, including remaining administrative burdens and streamlining techniques, and complete that study by April 30, 2015
- ◆ To undertake further rulemaking based on this study by April 30, 2016
- ◆ To not permit sources smaller than 50K until at least April 30, 2016

Implementation

- ◆ Legal challenges and potential legislation on each and every rule, but assuming the rules stand and Congress does not intervene
- ◆ As of January 2, 2011, PSD permits for large sources (coal-fired boilers, cement kilns, landfills, refineries) will have to address BACT for GHG emissions
- ◆ Title V permits will have to include GHG emissions, and some major sources of GHGs will have to obtain their initial Title V permit (details yet to be worked out on the Title V process).

Clean Air Act Advisory Committee

GHG BACT Workgroup

- Makeup of Workgroup
 - 19 Industry
 - 5 Environmental
 - 10 state/local/regional/tribal agencies
- The charge to the Work Group:
 - Discuss and identify the major issues and potential barriers to implementing the PSD Program under the CAA for greenhouse gases.
 - Focus on the BACT requirement, including information and guidance that would be useful for EPA to provide concerning the technical, economic, and environmental performance characteristics of potential BACT options.
 - Identify and discuss approaches to enable state and local permitting authorities to apply the BACT criteria in a consistent, practical and efficient manner.

Phase 1 Report

Areas of Discussion

- Defining the source/scope of analysis
- Criteria for determining Feasible Control Technologies
- Criteria for Eliminating Technologies
- Data and Guidance needs of States/Locals & other stakeholders
- Other (biomass, future availability of control)

Data and Guidance Needs of State/Local Agencies

Assumptions

- ◆ Agencies will use existing SIP approved PSD review process
- ◆ We do not envision a new process for GHG BACT determinations
- ◆ Top-Down-BACT process is preferred
- ◆ Some form of the tailoring rule will be adopted by EPA

Communication

- Periodic GHG control measures newsletter is recommended
- Communication among EPA headquarters, the Regions, and State/Local agencies on permit decisions is essential
- RACT/BACT/LAER Clearinghouse and ORD GHG Mitigation Database must be readily accessible, timely, complete, and adequately staffed

Guidance Needs

- ◆ Appropriate methods for calculating costs
- ◆ Pollution prevention methods
- ◆ Efficiency improvement MEASURES and technologies
- ◆ Emissions factors (including fugitives)
- ◆ Bio-fuel effects on GHG EMISSIONS
- ◆ Monitoring requirements, test methods, etc.
- ◆ Acceptable control technologies
- ◆ Ranking of GHGs with regard to impact
- ◆ Applicability and Netting for GHGs under PSD rules (with regard to both mass emissions and CO2 equivalency)
- ◆ Many more needs not listed here

Areas of Non-Consensus Within the Workgroup

- ◆ Appropriateness of New Source Performance Standards approach (primarily with regard to 111(d) standards for existing sources) ; Agreement for new sources
- ◆ Appropriateness of “Presumptive BACT” approach and standards
 - ◆ Many state/local agencies have called for such standards, especially for smaller sources; if presumptive BACT is not possible, call for model permits
 - ◆ Some members are concerned such standards would conflict with the case-by-case mandate of top-down BACT

Training

- ◆ Essential for all stakeholders
- ◆ Should be on both the process to be followed and the technical aspects of GHG controls
- ◆ National, Regional, State/Local level and periodic
- ◆ Must be timely and should communicate latest information to all parties

EPA Response to Phase 1 Recommendations

- Specific EPA commitments
 - New ORD GHG Mitigation Strategies Database
 - RACT/BACT/LAER Clearinghouse enhancements
 - Sector-based GHG control measures white papers (Seven sectors)
- Goal: provide timely guidance to pave the way for a smooth transition to permitting of GHG
- Issuance of Guidance is scheduled for this Fall

EPA Training

- ◆ Late fall for states/locals/tribes through the Regional Offices
- ◆ Webinars for industry and other stake holders
- ◆ AWMA NSR course may be revived
- ◆ Ongoing communication on permits, decisions, and questions through EPA headquarters

Workgroup Phase 2 Report

Two Questions

- Energy efficiency
 - How can the BACT process be used to encourage the development of energy efficient processes and technologies?
- Innovative emissions reduction measures
 - How can the development and permitting of innovative emission reduction measures, including the promotion of inherently efficient and lower emitting processes and practices for GHGs, be encouraged? How can the Innovative Control Technology waiver be used or changed to better promote technology development and application?

Phase 2 Report

- ◆ Will be discussed at next CAAAC meeting in Washington, DC on October 5,6
- ◆ Will then be formally passed on to EPA, but EPA is aware of the recommendations and is already working on items
- ◆ Energy Efficiency is the big topic of discussion

What to Expect January 2, 2011

- Applicable PSD permits (meeting the Tailoring Rule requirements) will have to address GHG emissions
- GHGs will have to be identified, quantified, and addressed through a top-down-BACT analysis, with enforceable limits and compliance assurance and monitoring in the permits
- Documentation of GHG control considerations and decisions will be essential

What to Expect January 2, 2011

- Carbon Capture and Storage (CCS) should be considered. Do not simply assume it is either not available or too expensive
- Alternative fuels/processes should be considered where applicable
- Energy Efficiency is always a consideration
- Netting out of GHG BACT is allowable
- Thorough documentation of decisions is essential

Questions?