



GHG BACT and Permitting Status

US Climate Partnership Association Briefing

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What I will Cover Today

- Upcoming GHG Rules
- Status of State GHG Programs
- GHG Permit Status
- EPA Resources – Guidance/Training
- GHG BACT/Permitting Guidance
- EPA Comments on GHG Permits



Upcoming GHG Rules/Actions

- Step 3 Rulemaking
 - To establish thresholds from July 2013 to April 2016
 - Rule must be completed by July 2012
 - Levels could stay the same or go as low as 50K
 - Gives us the opportunity to assess the manageability of GHG permitting



Upcoming GHG Rules/Actions (Cont..d)

■ Biomass Deferral

- Biomass Scientific Study / GHG Accounting Rule
- In Jan 2011, EPA announced an expedited rulemaking to defer completely the application of pre-construction permitting requirements to biomass-fired CO₂ *and other biogenic* CO₂ emissions for a period of three years.
 - Proposal available at <http://www.epa.gov/nsr/actions.html>; (comment period ended May 5)
 - Deferral applies to CO₂ emissions only.



Upcoming GHG Rules/Actions (Cont..d)

- EPA will use this time to conduct a detailed examination of the scientific and technical issues associated with biogenic CO₂ emissions and develop an accounting methodology, including a review by an independent panel
 - Science Advisory Board solicitation for panel nominations at <http://yosemite.epa.gov/sab/sabproduct.nsf/0/2F9B572C712AC52E8525783100704886?OpenDocument>
- We will use the results of this study to develop a rulemaking on how biogenic CO₂ emissions should be treated and accounted for in PSD and Title V permitting based on the feedback from the scientific and technical review.



Upcoming GHG Rules/Actions (Cont..d)

- Tailoring Rule Discussed Potential Streamlining Techniques
 - General permits
 - Presumptive BACT
 - Defining PTE for smaller sources
 - Electronic permitting
- Title V Program Revisions to adopt tailoring rule
- 5 Year Study / Step 4
- Most of these will require State adoption (SIP and title V program changes)



Status of State GHG Programs

- In 2010, EPA took a series of actions to ensure that PSD permitting would continue without disruption after the date when GHG emissions regulations were going to take effect - January 2, 2011.
- First, EPA issued a “SIP Call,” requiring 13 states to revise their PSD programs to cover GHG emissions.
 - Arizona (Pinal Co., Rest of AZ), Arkansas, California (Sacramento), Connecticut, Florida, Idaho, Kansas, Kentucky (Rest of KY, Jefferson Co.), Nebraska, Nevada (Clark Co.), Oregon, Texas, Wyoming
- Second, EPA issued FIPs to cover those programs that did not address how the program will apply to pollutants newly subject to regulation or that did not submit revised SIPs by their selected deadline.
 - Arizona (Pinal Co. and Rest of AZ), Arkansas, Florida, Idaho, Kansas, Kentucky (Jefferson Co.), Oregon, Texas, Wyoming



Status of State GHG Programs (Cont..d)

- As of May 2011, 4 of the 13 “SIP Called” states have received approval of their plans to regulate GHGs and 5 of these states are awaiting approval of their plans to receive that authority
 - **Approved**
 - Connecticut, Kansas, Kentucky (Rest of KY), Nebraska
 - **Awaiting Approval (States with * are Delegations)**
 - Arizona (Pinal Co., Rest of AZ)*, California (Sacramento), Kentucky (Jefferson Co.)*, Nevada (Clark Co.), Oregon

- Once EPA approves the plans for California (Sacramento) and Nevada (Clark Co.), EPA or the states will have authority to permit GHG sources for all the states



GHG Permit Status

- As of May 2011, **109** permit applications that include a GHG component have been submitted

- They include source categories such as:
 - Biofuel Production
 - Cement Plants
 - Electric Generating Units
 - Lime Production Facilities
 - Outer Continental Shelf Exploration
 - Pulp and Paper Mills
 - Refineries

- Of these 109 permit applications, **30** include a GHG BACT analysis



EPA Resources to Assist States and Industry

To ensure that GHG permitting runs smoothly for the larger sources that remain covered, EPA has provided the following:

- Guidance on key GHG Permitting topics (BACT, Biomass, etc.)
- White Papers on
 - utilities, refineries, cement, large commercial/industrial/institutional boilers, pulp and paper, iron and steel, and nitric acid plants
- Control Technology Clearinghouses
 - RACT/BACT/LAER, GHG Mitigation Strategies
- GHG Permitting Action Team
 - Primary and Secondary Contacts for each EPA Regional Office
 - Weekly internal meetings to address and coordinate issues



EPA Resources to Assist States and Industry

- GHG Training for States, Industry and Other Interested Stakeholders
 - www.epa.gov/apti/broadcast2010.html#GHGTraining1210
- Updates on NACAA monthly permitting committee calls; special purpose calls as needed
- Website for GHG permitting resources: www.epa.gov/nsr/ghgpermitting
 - Contains links to White Papers, Clearinghouses, Permitting Action Team, etc.
 - Updated to include new Q&A's as issued (3 posted; more likely)
 - Also updated to include EPA comment letters on proposed permits involving GHG



GHG Permitting Guidance

- Issued November 2010; technical correction posted March 2011.
- Provides statutory and regulatory background for the permitting and regulation of GHGs.
- Explains that the PSD and Title V permitting requirements are generally no different for GHGs.
- Emphasizes the importance of developing a good record.
- Document is guidance, not a rule.
- SIP approved Permitting Authorities have discretion to be more stringent than this policy.



GHG Permitting Guidance (Cont..d)

- Long-standing and familiar processes apply to GHGs
 - BACT determinations continue to be state- and project-specific decisions
 - GHG BACT is not prescribed for any source type
- In most cases, energy efficiency improvements will satisfy the BACT requirement for GHGs.
- Carbon Capture and Sequestration (CCS) should be considered an available control option for certain types of sources, but required consideration of costs will likely rule CCS out for now.
 - However, there are cases now where the economics of CCS may be more favorable – e.g., enhanced oil recovery.



GHG Permitting Guidance (Cont..d)

- Specific types of fuels or facility design neither required nor precluded
- A BACT analysis for greenhouse gas emissions does not need to consider a fuel switch that would fundamentally redefine the source.
- Ranking of control options should be based on total CO₂e, rather than total mass or mass for the individual GHGs.
- Should focus on longer-term averages (*e.g.*, 30- or 365-day rolling average) rather than short-term averages.
- Emphasizes proper documentation of BACT decisions to bolster the permit record.



GHG Permitting Guidance (Cont..d)

GHG Applicability

- Reiterates applicability framework from Tailoring Rule
 - GHG applicability based on mass (statutory thresholds) and CO₂e (“subject to regulation”) emissions.
 - Results in 2-part test for new sources and a 4-part test for modifications.
- Demonstrates how to calculate CO₂e-based emissions using global warming potential (GWP).



Modeling and Monitoring

- Since there are no NAAQS or PSD increments, ambient modeling (i.e., additional impacts analysis or Class I area) is not required for GHG emissions.
- EPA does not consider it necessary for applicants to gather monitoring data to assess ambient air quality for GHGs, since GHGs do not affect “ambient air quality” in the sense that EPA intended in its rules for other pollutants.



EPA Comments on GHG Permits

- To date, EPA Regions have provided GHG BACT related comments on seven proposed State PSD permits.
 - – Nucor in Louisiana, Direct Reduced Iron Production
 - – PacifiCorp Lakeside in Utah, CC Gas Turbines
 - – We Energies in Wisconsin, Biomass Cogen
 - – Hyperion in South Dakota, Refinery
 - – Abengoa in Kansas, Bioenergy (*withdrawn*)
 - – MidAmerican in Iowa, FGD/SNCR/ACI controls
 - – Wolverine in Michigan, Coal/biomass CFB boilers



EPA Comments on GHG Permits (Cont..d)

- Include adequate support and explanation for form of GHG BACT emissions limit
 - Numerical emissions limit, or design standard or some other type of requirement if numerical limit deemed infeasible.
- Ensure practical enforceability, adequate compliance monitoring to measure emissions or efficiency over time.
 - Consideration of non-CO₂ constituents— CH₄ and N₂O – for combustion sources.
- Provide adequate explanation for rejecting control options (e.g., CCS) based on feasibility or cost. The permit record should clearly show where in the top down BACT analysis CCS was eliminated as a potential control technology
- Proposing to install a “high efficiency” CT/HRSG as BACT does not meet the definition of BACT (undefined, unenforceable design standard).



EPA Comments on GHG Permits (Cont..d)

- State should consider setting a lb/MWh GHG Carbon Dioxide equivalent (CO₂e) BACT limit when the biomass-fired boiler is operating in co-generation mode. For the biomass and natural gas boiler, clarify whether all the GHGs emitted by the project are included in the CO₂e limits.
- Source must ensure that the CO₂e emissions during start-up and shut-down are included in the compliance calculation for the CO₂e BACT limits in lb/MWh.
- **Bottom line: documentation of GHG control considerations and BACT limits is important for a robust permit record**



GHG Permitting: The Year Ahead

- Late June 2011 – Final Action on Biomass Deferral from Permitting
- July 1, 2011 – PSD and Title V begin to apply to large GHG sources ($\geq 100,000$ tpy CO₂e) and modifications ($\geq 75,000$ tpy CO₂e) that would not previously have been subject to those programs
- January 2012 – Proposed Tailoring Step 3 Rule
- Spring 2012 – Biomass scientific study released
- July 2012 – Final Tailoring Step 3 Rule (one year for states to adopt)
- Late 2012 – If necessary, proposed rule addressing biomass study
- July 2013 – Tailoring Rule Step 3 goes into effect
- Ongoing – Additional Q&A's, guidance as necessary