Clean Air Act Permitting for Greenhouse Gases: Guidance and Technical Information

FACT SHEET

Action

- On November 10, 2010, the U.S. Environmental Protection Agency (EPA) made available important resources and guidance to assist state and local permitting authorities as they implement their Clean Air Act (CAA) permitting programs for greenhouse gas (GHG) emissions. These tools include guidance on implementing the Prevention of Significant Deterioration (PSD) and Title V Operating Permit Programs for GHGs and technical resources to assist states and sources in identifying control measures for GHG emissions.

- EPA's GHG Tailoring Rule, issued in May 2010, established a common sense approach to permitting GHG emissions. Under the rule, permitting will focus on the largest industrial sources, those emitting nearly 70 percent of the greenhouse gas pollution from stationary sources, while shielding millions of small businesses that make up the vast majority of the U.S. economy. EPA's guidance and technical resources are the next step in the agency's common-sense approach to identifying cost-effective emissions control options for these large emitters.

- Permitting authorities have long-standing experience working together with large industrial facilities, including electric generating units, cement production facilities, and petroleum refineries, and are best suited to issue Clean Air Act permits to sources of GHG emissions.

- EPA is working closely with permitting authorities and will take any necessary actions to ensure that by January 2011:

    - permitting agencies have the authority to permit GHGs,

    - only the largest emitters of GHGs, as outlined in the GHG Tailoring Rule, will need to obtain permits,

    - necessary guidance, technical information, and support are available, and

    - the states have the mechanisms in place to ensure permitting can occur without any interruptions.

GHG Permitting Tools

- **Permitting Guidance for GHGs** – EPA's "PSD and Title V Permitting Guidance for Greenhouse Gases" provides the basic information that permit writers and applicants need to address GHG emissions in permits. The guidance:
    - applies long-standing PSD and Title V permitting requirements and processes to GHGs;
    - reiterates that BACT determinations will continue to be a state, and project specific decision;
    - does not prescribe GHG BACT for any source type;
    - emphasizes the importance of BACT options that improve energy efficiency;
    - points out that Carbon Capture and Sequestration (CCS) is a promising technology in the early stage of demonstration and commercialization. While it should be identified as an available control measure in the first step of BACT, it is currently an expensive technology and unlikely to be selected as BACT in most cases;
    - clarifies that EPA does not intend to require GHGs to be addressed in permits issued before January 2, 2011 that do not become effective until after this date;
    - notes that biomass could be considered BACT after taking into account environmental, energy and economic considerations and state and federal policies that promote biomass for energy-independence and environmental reasons.
    - provides flow charts and examples that illustrate the key points of the traditional five-step process for determining BACT for GHGs; and
    - identifies technical resources related to GHG emissions and controls.
- This guidance **does not** establish a new approach for selecting BACT for GHG emissions. Rather, permitting authorities may continue to use the five-step process that EPA has recommended and that they they have used for over 30 years. The process starts by looking at all available emission reduction options and narrows the options by taking into account technical feasibility, cost, and other economic, environmental and technical considerations. The five-steps include:
    - Step 1: Identify all available control technologies.
    - Step 2: Eliminate technically infeasible options.

- Step 3: Evaluate and rank remaining control technologies based on environmental effectiveness.
- Step 4: Evaluate cost effectiveness of controls and energy and other environmental impacts
- Step 5: Select the BACT.

- The public may view and provide feedback on the GHG permitting guidance at http://www.epa.gov/regulations/guidance/byoffice-oar.html. EPA will publish a notice in the *Federal Register* announcing the availability of the GHG permitting guidance and the opportunity for public comment. The Agency welcomes public feedback on the guidance over the next few weeks on any aspect that contains technical or calculation errors or where the guidance would benefit from additional clarity.

- **White Papers on GHG Control Measures** – These technical "white papers" focus on the industrial sectors listed below that emit the highest amounts of GHGs. They provide basic information on GHG control options to assist states and local air pollution control agencies, tribal authorities and regulated entities implementing measures to reduce GHGs, particularly in the assessment of Best Available Control Technology (BACT) under the PSD permitting program. These papers provide basic technical information that may be useful in a BACT analysis but they do not define BACT for each sector. The industrial sectors covered include:
  - Electric Generating Units
  - Large Industrial/Commercial/Institutional Boilers
  - Pulp and Paper
  - Cement
  - Iron and Steel Industry
  - Refineries
  - Nitric Acid Plants

- **Enhancements to the Control Technology Clearinghouse (known as the RACT/BACT/LAER Clearinghouse, or the RBLC)** – This website provides access to information and decisions about pollution control measures required by air pollution emission permits that will be issued for GHGs by state and local permitting agencies. The information is accessible to all permitting agencies working on similar projects. The expanded RBLC includes GHG control and test data, and a GHG message board for permitting authorities.

- **GHG Mitigation Strategies Database** – EPA expects technology capable of reducing GHG emissions in various major industrial sectors will evolve. Recognizing the importance of tracking these developments, EPA has developed a new online tool which includes specific performance and cost data on current and developing GHG control measures. It also provides available data on other potential environmental impacts a GHG control measure may have. Currently, the database includes information on GHG controls for electric generating and cement production.

- **GHG Permitting Action Team** – EPA has formed this team to help permitting authorities respond to GHG permitting questions. The GHG Permitting Action Team, comprised of experienced senior staff and permitting managers from EPA, will work together to provide a smooth transition to GHG permitting. Team members for each region and their contact information are listed on EPA's GHG Permitting Webpage: www.epa.gov/nsr/ghgpermitting.html

- **Background –** The Clean Air Act Advisory Committee (CAAAC) provides advice and counsel to EPA on a variety of important air quality policy and technical issues. In October 2009 the CAAAC established a Climate Change Work Group which included representatives from state and local governments, a variety of industries and environmental and public health non-profit organizations.

    - In connection with it efforts, the Work Group issued two reports. The reports recommended that EPA develop a number of technical tools and resources, including GHG specific guidance to be used to assist permitting agencies in determining BACT for GHGs. The tools EPA is making available today respond to the recommendations and suggestions of the CAAAC Work Group. The recommendations are listed on: http://www.epa.gov/air/caaac/climatechangewg.html

Background

- On April 2, 2007, the Supreme Court found that GHGs, including carbon dioxide, fit within the definition of air pollutant in the CAA. *Massachusetts v. EPA*, 549 U.S. 497 (2007). The Court found that when responding to a rulemaking petition under section 202(a) of the CAA, EPA was required to determine whether or not GHG emissions from new motor vehicles cause or contribute to air pollution which may reasonably be anticipated to endanger public health or welfare, or whether the science is too uncertain to make a reasoned decision.

- On December 7, 2009, the EPA Administrator signed two distinct findings regarding GHGs under section 202(a) of the CAA:

Endangerment Finding: The Administrator found that the current and projected atmospheric concentrations of the six, key, well-mixed GHGs—CO_2, CH_4, N_2O, HFCs, PFCs, and SF_6 –threaten the public health and welfare of current and future generations.

Cause or Contribute Finding: The Administrator found that the combined emissions of these well-mixed GHGs from new motor vehicles and new motor vehicle engines contribute to the greenhouse gas pollution which threatens public health and welfare.

- These findings, which were published December 15, 2009, do not impose any requirements on industry or other entities. However, they were a prerequisite to finalizing the GHG standards for light-duty vehicles.

- On December 18, 2008, EPA issued a memorandum, "EPA's Interpretation of Regulations that Determine Pollutants Covered by Federal Prevention of Significant Deterioration (PSD) Permit Program" (known as the "Johnson Memo" or the "PSD Interpretive Memo"). Whether a pollutant is "subject to regulation" is important for the purposes of determining whether it is covered under the CAA permitting programs. The PSD Interpretive Memo established that a pollutant is "subject to regulation" only if it is subject to either a provision in the CAA or regulation adopted by EPA under the CAA that requires control of emissions of that pollutant. On February 17, 2009, EPA granted a petition for reconsideration of this memorandum.

- On March 29, 2010, the Administrator signed a notice conveying the Agency's decision to continue applying the PSD Interpretive Memo's interpretation of "subject to regulation." EPA concluded that the "actual control interpretation" is the most appropriate interpretation. The Agency established that CAA permitting requirements apply to a newly regulated pollutant at the time a regulatory requirement to control emissions of that pollutant "takes effect" (rather than upon promulgation or the legal effective date of the regulation containing such a requirement). Based on the anticipated promulgation of the light-duty vehicle rule, the notice stated that the GHG requirements of the vehicle rule would trigger CAA permitting requirements for stationary sources on January 2, 2011.

- On April 1, 2010, EPA finalized the light-duty vehicle rule controlling GHG emissions. This rule confirmed that January 2, 2011, is the earliest date that a 2012 model year vehicle meeting these rule requirements may be sold in the United States.

- GHG emissions from the largest sources will, for the first time, be covered by the PSD Program on January 2, 2011 and by the Operating Permit Program on July 1, 2011. These permitting programs, required under the Clean Air Act, are proven tools for

protecting air quality and can be used to control GHG emissions. But the thresholds established in the Act for other air pollutants, 100 and 250 tons per year, were based on traditional pollutants and were not designed to be applied to GHGs.

- On May 13, 2010, EPA issued the final GHG Tailoring Rule. This rule effectively raised the thresholds for GHG emissions that define when permits under the PSD and Title V Operating Permit programs are required for new and existing industrial facilities. Without the GHG Tailoring Rule, the thresholds established in the CAA for other pollutants would apply to GHGs. The phased in approach, established in the Tailoring Rule, provides time for large industrial facilities and state governments to develop the capacity to implement permitting requirements for GHGs.

    - Starting in January 2011, large industrial facilities that must already obtain Clean Air Act permits for non-GHGs must also include GHG requirements in these permits if they increase are newly constructed and have the potential to emit 75,000 tons per year of carbon dioxide equivalent (CO_2e) or more or modify and increase GHG emissions by that amount.

    - Starting in July 2011, in addition to facilities described above, all new facilities emitting GHGs in excess of 100,000 tons of per year CO_2e and facilities making changes that would increase GHG emissions by at least 75,000 tpy CO_2e, and that also exceed 100/250 tons per year of GHGs on a mass basis, will be required to obtain construction permits that address GHG emissions (regardless of whether they emit enough non-GHG pollutants to require a permit for those emissions.)

    - Operating permits will be needed by all sources that emit at least 100,000 tons of GHG per year on a CO_2e basis beginning in July 2011.

    - Sources less than 50,000 tons of GHGs per year on a CO_2e basis will not be required to obtain permits for GHGs before 2016.

- Congress established the NSR program as part of the 1977 Clean Air Act Amendments and modified it in the 1990 Amendments. NSR is a preconstruction permitting program that serves two important purposes:

    1. Ensures the maintenance of air quality standards or, where there are not air quality standards, ensures that air quality does not significantly worsen when factories, industrial boilers, or power plants are modified or added. In areas that do not meet the national ambient air quality standards, so-called nonattainment NSR assures that new emissions do not slow progress toward cleaner air. In areas that meet the standards, especially pristine areas like national parks,

NSR's PSD program assures that new emissions fall within air quality standards.

2. Ensures that state-of-the-art control technology is installed at new plants or at existing plants that are undergoing a major modification. New major stationary sources and major modifications at existing major stationary sources that meet emissions applicability thresholds outlined in the CAA and in existing PSD regulations must obtain a PSD permit outlining how they will control emissions. The permit requires facilities to apply best available control technology, which is determined on a case-by-case basis taking into account, among other factors, the cost and effectiveness of the control.

Additional Information

- The GHG technical information and guidance materials are accessible on EPA's website at: www.epa.gov/nsr/ghgpermitting.
- For more information on the permitting guidance for GHG, please contact Dave Svendsgaard at 919-541-2380, or svendsgaard.dave@epa.gov.
- For more information on the GHG control measures white papers, please contact David Solomon at 919-541- 5375, or solomon.david@epa.gov.
- For more information on the enhancements to the RACT/BACT/LAER Clearinghouse, please contact Iliam Rosario at 919-541-5308, or rosario.iliam@epa.gov.
- For more information on the GHG mitigation strategies database, please contact Nick Hutson at 919-541-2968, or hutson.nick@epa.gov.