

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

1. What is EPA releasing today?

- EPA has developed a number of tools to assist permitting authorities and industrial sources with permitting GHGs including:
- General guidance on how to apply the Prevention of Significant Deterioration (PSD) permitting requirements, including determining the Best Available Control Technology (BACT) and title V operating permits program to greenhouse gases (GHG).
- Technical information on GHG control options for specific industrial sectors –power plants, refineries, iron and steel mills, pulp and paper mills, nitric acid plants, cement plants and boilers.
- A GHG mitigation data base outlining the stage of development, demonstration and availability for key control technologies in two industrial sectors (electricity generation and cement production).
- Enhancements to the Control Technology Clearinghouse (known as the RACT/BACT/LAER Clearinghouse) by adding performance and cost data for existing and future permits that address GHGs.

2. What is BACT?

- BACT is an emissions limitation that is based on the maximum degree of control that can be achieved by a particular facility. It is a case-by-case decision that takes into account technical feasibility, cost, and other energy, environmental, and economic impacts. BACT can be add-on control equipment or modification of the production processes or methods. BACT may be a design, equipment, work practice, or operational standard if imposition of a numeric emissions standard is infeasible.

3. Where can I look at these GHG permitting tools and get more information?

- All are accessible on the web at: www.epa.gov/nsr/ghgpermitting.html

4. Do these tools identify BACT for specific types of industrial facilities?

- No
- These tools do provide information permit writers and applicants could consider in addressing GHGs in permits. The guidance and tools do not determine the best available control technology for any source.
- BACT analysis involves a case-by-case review of available emissions controls, taking into account cost, energy, environmental and economic impacts.
- The guidance does not dictate what BACT is; it supports efforts to consider all kinds of permit applications and does not preclude permitting of different fuels (including coal), facility designs, etc.

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5. What does the guidance say?

- Specifically, EPA’s “PSD and title V Permitting Guidance for Greenhouse Gases”:
 - Makes clear adding GHGs does not mean that the BACT process everyone is used to has to change
 - Identifies the general requirements of the PSD and title V operating permit regulations and how they apply to GHGs
 - Reviews relevant past guidance for other regulated air pollutants
 - Provides suggested approaches for addressing the permitting requirements for GHGs including examples.
- The guidance emphasizes the importance of options that improve energy efficiency.
- The guidance notes 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 for the large combustion source in these high GHG emitting sectors (Fossil-Fuel Fired Power Plants, Cement Production, and Iron and Steel Manufacturing), it is currently an expensive technology and unlikely to be selected as BACT in most cases.

6. What steps would a permitting authority go through to determine BACT?

- This guidance **does not** establish a new approach for selecting BACT for GHG emissions. Rather, permitting authorities should continue to use the five-step process 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 consideration technical feasibility and energy, economic and environmental impacts. 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
- In most cases for GHGs, this process should lead to implementing energy efficiency measures, which generally cost less than add on emission controls and can result in cost savings.

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7. Is EPA taking comment on the guidance?

- 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. If appropriate, EPA will issue a revised version of the guidance well in advance of January 2, 2011, when GHG permitting takes effect.

8. What are the next steps?

- The Agency also will provide training for state and local permitting authorities. A link to web-based training modules will be available on EPA's GHG permitting website. Permit applicants and other interested stakeholders may also take the training.
- EPA will continue to work closely with permitting authorities to provide them with the necessary support/tools to get them ready to permit sources of GHG emissions on January 2, 2011 in accordance with the Tailoring Rule.
- EPA proposed and will finalize rules to ensure that everything that needs to be in place by January 2, 2011 is in place for states to begin permitting of GHG sources.
- EPA welcomes public feedback on the guidance over the new few weeks on any aspect of the guidance that contains technical or calculation errors or where the statements concerning EPA policy might benefit from additional clarification. EPA will publish a notice in the *Federal Register* announcing the availability of the GHG permitting guidance and the opportunity for public comment.

9. What will EPA do if by January 2, 2011 a state isn't ready to begin permitting GHGs?

- EPA is working closely with permitting authorities to assure that on January 2, 2011, sources needing a permit for GHG emissions will be able to get one. This provides sources with certainty in planning for new construction as well as expansion projects.
- EPA and most of the states have a mechanism in place to ensure permitting can occur without interruption.
- For states not ready to permit for GHGs, EPA will continue to work with them to find a clear path forward to ensure that permits can be issued in a timely way.
- States are best-suited to issue permits to sources of GHG emissions. They have longstanding experience working together with industrial facilities under their jurisdiction to process PSD permit applications. EPA will continue to provide guidance and act as a resource for the states as they make the various required permitting decisions for GHG emissions.

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10. If “energy efficiency” is a BACT approach, what does “energy efficiency” mean?

- Energy efficiency is not a new concept and has always been an available option to reduce emissions in any BACT review.
- Determining BACT for a new combustion source should include the consideration of methods that increase the overall energy efficiency of the source. In general, a more energy efficient technology burns less fuel than a less energy efficient technology on a per unit of output basis.

More information:

- For example, coal-fired boilers operating at supercritical steam conditions consume approximately 5 percent less fuel per megawatt hour produced than boilers operating at subcritical steam conditions. Thus, considering the most energy efficient technologies in the BACT analysis helps reduce the products of combustion, which includes not only GHGs but other regulated NSR pollutants (e.g., NO_x, SO₂, PM, CO, etc.).
- The series of technical “white papers” EPA is making available today summarize readily available information on control techniques to reduce GHG emissions from specific industrial sectors. These papers provide basic technical information and examples of energy efficiency measures already in use for particular industries.

11. How is biomass treated for GHG permitting?

- In the Tailoring Rule, EPA did not take final action one way or another concerning the treatment of biomass combustion emissions for air permitting purposes, because there was not sufficient information in the record before us.
- Permitting authorities may now begin to take into account the environmental, energy and economic benefits of biomass during the BACT selection process.

12. Does this guidance say that fuel switching (coal to natural gas) should be selected as BACT for a power plant?

- No.
- BACT should consider the most energy efficient design and control options for a proposed source.
- BACT should also include consideration of “clean fuels” that may produce fewer emissions but does not necessarily require a different type of fuel from the one proposed, particularly when it can be shown that using another type of fuel would be inconsistent with the fundamental purpose of the facility.

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13. Does this guidance say that carbon capture and storage (CCS) should be selected as BACT?

- No
- Carbon Capture and Sequestration 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 for a large combustion source in these high GHG emitting sectors (Fossil-Fuel Fired Power Plants, Cement Production, And Iron And Steel Manufacturing), it is currently an expensive technology and unlikely to be selected as BACT in most cases.

14. How do these tools relate to the Clean Air Act Advisory Committee's Climate Change Work Group?

- 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.
- The work group recommended that EPA develop a number of technical tools and resources, including GHG specific guidance, to help permitting agencies in determining the best available control technology (BACT) for GHGs. The tools EPA is making available today respond to the recommendations and suggestions of the work group and are the next steps in EPA's common-sense approach to help permitting authorities and large facilities such as power plants and oil refineries identify cost-effective options to control GHG emissions.

15. How will GHG permitting affect my Title V permit?

- Starting January 2, 2011, sources with title V permits will be required to address GHGs as part of their title V permits actions. The title V regulations require that title V permits contain all Clean Air Act applicable requirements to which the source is subject.
- Existing sources would not need to include GHGs in their Title V permit until their permit is renewed or they make a major modification that increases emissions above 75,000 tons per year of CO₂e.

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- As a general matter, in the case of GHG emissions, the only applicable requirement a title V source would need to add to their permit would be best available control technology (BACT) requirements resulting from PSD review if the source triggered such requirements. Otherwise, there are some application requirements under title V that could require the source to describe or estimate their level of GHG emissions.

16. Under what conditions will I need to get a Title V permit?

- No sources will be required to obtain title V permits solely as a result of their GHG emissions between January 2, 2011 and June 30, 2011.
- Starting July 1, 2011, a new source of GHG emissions that exceeds the thresholds in the final Tailoring rule (100,000 tons per year (tpy) of CO₂e for a new source and 100,000 tpy CO₂e and 75,000 tpy CO₂e resulting from a modification) will be required to obtain a title V permit.
- Existing sources would not need to include GHGs in their Title V permit until the permit is renewed or they make a major modification that increases emissions above 75,000 tons per year of CO₂e.

17. How much time will GHG permitting add to the permitting process?

- The amount of time required to address GHG permitting will vary from source to source just like it does for any pollutant subject to regulation. Starting in January 2011, permit applicants will be evaluating BACT for GHGs at the same time as other pollutants. This period will allow experience to be gained before additional sources may be required to obtain PSD permits beginning July 2011 based on the amount of GHGs that they emit.

18. Hasn't EPA been sued on the Tailoring Rule and the GHG light-duty vehicle rule?

- Suits have been filed challenging several of the GHG-related actions completed by EPA, including the Tailoring Rule and the light-duty vehicle rule.

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19. What happens if EPA loses that challenge or the tailoring rule gets stayed?

- Depending on the decision from the court, there are a number of different possible outcomes.
- We can't speculate about what the court will decide or how requirements to control GHG emissions may or may not be affected by the possible outcomes.