Fact Sheet – Prevention of Significant Deterioration Applicability for Greenhouse Gases

Overview

- The pollutant greenhouse gases (GHGs) is a non-criteria pollutant defined in Title 30 Texas Administrative Code (TAC) §101.1.
  - GHGs are the aggregate group of six greenhouse gases: carbon dioxide (CO_2), nitrous oxide (N_2O), methane (CH_4), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF_6).
  - Prevention of Significant Deterioration (PSD) review is an EPA major new source review (NSR) program for authorizing major sources and major modifications of existing major sources of criteria pollutants, which are located in areas that are in compliance with the national ambient air quality standards (NAAQS) for a particular criteria pollutant. PSD also applies in any area for certain non-criteria pollutants that do not have a NAAQS. Emissions of GHGs are included in the PSD program state-wide, regardless of the attainment status of any area for any pollutant. There is no NAAQS for GHGs.
- GHGs are a regulated pollutant under the PSD program when emissions exceed the thresholds in 30 TAC §116.164(a)(1) or (a)(2). There is no minor source program for GHGs.
- PSD applicability for GHGs is determined by the sum of the individual gases on a mass basis (tons per year, tpy) and the sum of the carbon dioxide equivalent (CO_2e) for the individual gases.
  - The CO2e for an individual GHG is determined by multiplying the emissions (in tpy) by the global warming potential (GWP) for the individual gas.
  - GWPs for individual gases are in 40 Code of Federal Regulations (CFR) Table A-1 to Subpart A of Part 98.
- For PSD applicability, there are two thresholds that define a major source for a federally regulated NSR pollutant. See Fact Sheet – PSD and Nonattainment.
  - *Named* sources are listed in 40 CFR §51.166(b)(1) and are major if they have a potential to emit (PTE) of 100 tpy or more of a regulated pollutant.
  - *Un-named* sources are not listed and are major if they have a PTE of 250 tpy or more of a regulated pollutant.
    - We refer to the two thresholds as 100/250 tpy of a regulated pollutant.
- For PSD applicability, there are significant emissions rates (SERs) listed in 40 CFR §51.166(b)(23) that define major modifications (a physical change or change in the method of operation). See Fact Sheet – PSD and Nonattainment Significant Emissions.
  - The mass-based SER for GHGs is a net increase greater than zero tpy because no SER is specifically listed.
  - GHGs have an additional threshold of a net increase of 75,000 tpy CO2e for modifications.
- Fugitive emissions of GHGs are included in the total emission rate when determining if the source or modification is major if: 1) the source is a named source or 2) the source is regulated (as of August 7, 1980) under Section 111 (New Source Performance Standards) or 112 (Hazardous Air Pollutants) of the Federal Clean Air Act.

PSD Applicability for GHGs

Emissions of GHGs are regulated and require authorization **only** when the project emission increases are above the thresholds in 30 TAC §116.164(a)(1)-(a)(2).

PSD permitting is required for GHGs in the following scenarios.

New source ─ PSD major for non-GHGs

- The project emissions are above the major source threshold for a regulated pollutant that is not GHGs, and

- Will emit or have the potential to emit 75,000 tpy or more CO_2e [30 TAC §116.164(a)(1)].

Existing source – PSD major for non-GHGs

- The project emissions are above the major modification thresholds at an existing major source for a regulated pollutant that is not GHGs, and
- Will have a net emissions increase of GHGs greater than zero tpy on a mass basis and a net emissions increase of 75,000 tpy or more CO_2e [30 TAC §116.164(a)(2)].

PSD BACT and Impacts

For GHG PSD review, sources must apply best available control technology (BACT).

An air quality analysis for GHGs (i.e., air dispersion modeling, ambient air monitoring, additional impacts, or Class I area impacts) is not required. (See EPA's PSD and Title V Permitting Guidance for Greenhouse Gases.)

However, certain individual gases that are included in GHGs may require an impacts review as part of an authorization through TCEQ's major and minor NSR permit programs, as applicable. The health and welfare impacts evaluation is described in the Modeling and Effects Review Applicability, Appendix B Toxicology Emissions Screening List (APDG 5874).

The evaluation of any individual gas included in GHGs with health and welfare impacts would be documented in the technical review of the application for the associated action to authorize the non-GHG pollutants. For example, consider a source that will emit major emissions of GHGs, including N_2O. Since N_2O has an effects screening level (ESL), the impacts evaluation for N_2O would be documented in the technical review for the associated non-GHG project.

Non SIP-Approved Rules Relating to GHGs

The following rules were adopted prior to the June 2014 Supreme Court opinion regarding GHGs, based on the federal regulations and guidance that was available at the time. However, these rules were not approved into the Texas SIP by EPA because they are not consistent with the Supreme Court opinion.

- Rules pertaining to the use of PBRs and Standard Permits with GHG PSD permits
  - § 106.4(a)(1), (3) and (4)
  - § 116.610(b)
  - § 116.611(b) and (c)(3)
- Step 2 Sources
  - § 116.164(a)(3)-(a)(5) and (b)
  - § 116.111(a)(2)(I)
  - § 116.12(19)
  - § 116.12(20)
  - § 116.160(a) and (b)
- Title V
  - § 122.122(e)(3) [(§ 122.10(14))]

TCEQ's GHG website: www.tceq.texas.gov/goto/ghg