

# **Overview of National Greenhouse Gas Policy**

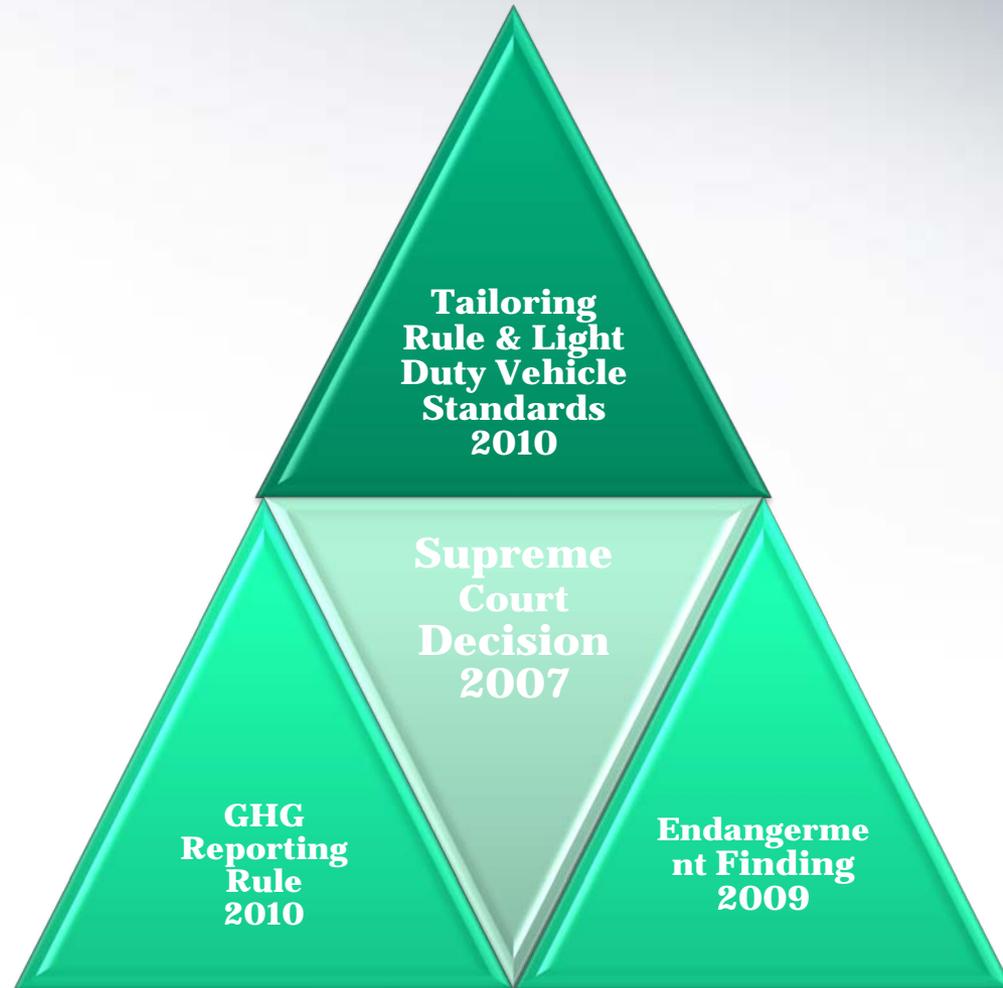
**2010 Brown Bag Series  
Maricopa County AQD**

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Clean Energy and Climate Change Office**

**August 10, 2010**



# Select Elements of National GHG Policy



# Supreme Court Decision



- GHGs are air pollutants covered under the Clean Air Act
- Determine if GHGs 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

Supreme  
Court  
Decision  
2007

# Endangerment Finding



- Actually two distinct findings:
  - (i) GHGs threaten the public health and welfare of current and future generations
  - (ii) emissions from motor vehicles contribute to greenhouse gas pollution
- These findings do not themselves impose any requirements on industry or other entities



# GHG Reporting Rule



- Generally applies to:
  - Suppliers of fossil fuels and industrial GHGs
  - Manufacturers of vehicles and engines
  - Facilities that emit  $\geq 25,000$  metric tons per year
  - Additional source categories being added in 2010
- Data collection began Jan. 1, 2010
- First report due March 31, 2011



# Light Duty Vehicle GHG Standards



- First EPA regulation of GHGs
- Applies to model years 2012 - 2016
- Joint rulemaking between DOT and EPA
- Encompasses 60% US transportation emissions

	Current CAFE Standards	DOT 2016 CAFE Standards	EPA 2016 Standards	Approximate EPA MPG Equivalent
Passenger car	27.5 MPG	39.5 MPG	225 gCO <sub>2</sub> /mile	
Light-duty Truck	23.1 MPG	29.8 MPG	298 gCO <sub>2</sub> /mile	
Combined Car & Truck			250 gCO <sub>2</sub> /mile	35.5 MPG

# Tailoring Rule



- Effective January 2, 2011
- “Tailors” the requirements to focus PSD and title V permit requirements on the largest emitting facilities
- Covers nearly 70% of US GHG emissions from stationary sources (e.g., refineries, power plants, cement plants)



# Regulating GHGs in PSD and Title V Permitting Programs

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## 2010 Brown Bag Series Maricopa County AQD

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*Participation by teleconference  
August 10, 2010*



# ▼ Overview of Select PSD Elements

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- Authority
- Applicability Thresholds
- Other Rule Elements
- BACT Consideration

# ▼ PSD Authority

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- Part C of the CAA 160 -169
  - Major sources required to obtain a PSD permit
- 40 CFR Part 51 160-164, 166
  - States required to adopt PSD SIP program
  - Otherwise EPA PSD FIP applies (see 52.144)
  - FIP (see 52.21) may be delegated to local agency

## ▼ **Applicability –**

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### **Who Needs to Get a PSD Permit?**

- New and modified sources emitting any pollutant regulated under the CAA at or above specified thresholds
- Does not apply to any pollutant for which an area has been classified by EPA as non-attainment

(Note: PSD applies to NO<sub>2</sub> if classified attainment, even in an Ozone non-attainment area that regulates NO<sub>x</sub>)

# ▼ Applicability –

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## Who Needs a PSD Permit?

- New major sources w/ PTE at or above:
  - 250 tons per year (tpy) or
  - 100 tpy for 28 specified source categories  
(must include fugitive emissions for these 28 source categories)
- Major modifications
  - at existing major source
  - physical change or change in operation
  - project emissions increase and facility net emissions increase both greater than significance thresholds

# ▼ PSD Applicability

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- As of today, once PSD major for any non-GHG pollutant (100/250 tpy), then must determine if significant for any other regulated pollutant
- Significance thresholds in tpy:
  - 100 for CO, ODS; 40 for NO<sub>x</sub>, SO<sub>x</sub>, VOC; 25 for PM, 15 for PM<sub>10</sub>, 10 for PM<sub>2.5</sub>, H<sub>2</sub>S, TRS, Reduced sulfur compounds; 7 for Sulfuric Acid Mist; 3 for Fluorides; 0.6 for Lead; and specific limits for various Municipal waste combustor emissions.

# ▼ Why We Need a Tailoring Rule for GHGs

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- To tailor the PSD and title V permitting programs such that the number of GHG-emitting facilities regulated under these programs will be administratively manageable and make practical sense
- This is the legal basis for changes to current major source thresholds for GHGs

# ▼ Tailoring Rule and GHGs

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- GHGs become subject to regulation under PSD and Title V beginning 1/2/11
- Final Tailoring Rule published on 6/3/10, in the Federal Register, vol. 75, p. 31514
  - Tailoring Rule proposed on 10/27/09
- GHGs consist of CO<sub>2</sub>, CH<sub>4</sub>, N<sub>2</sub>O, SF<sub>6</sub>, PFCs, and HFCs.
- Common metric: CO<sub>2</sub>e.

# ▼ Step 1 – “Anyway” Sources

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- Beginning January 2, 2011
  - If subject to PSD permitting anyway:
    - Must include GHG if proposed project **NET** GHG emissions increase  $\geq 75,000$  TPY of CO<sub>2</sub>e
  - If source is already subject to title V:
    - Must include GHG applicable requirements when applying for new, renewal or revised title V permit
  - PSD and title V permit requirements can not be triggered by GHG emissions alone

## ▼ Step 2 – GHG PSD Sources

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- Beginning July 1, 2011
  - Continue with Step 1 & add Step 2
  - GHG alone can now trigger PSD
  - New sources subject to PSD if:
    - PTE of total GHG mass emissions  $\geq 100/250$  TPY, **AND**
    - CO<sub>2</sub>e (i.e., sum of GHG GWP)  $\geq 100,000$  TPY
  - Modifications subject to PSD if:
    - **NET** GHG mass emissions increases, **AND**
    - **NET** CO<sub>2</sub>e increases  $\geq 75,000$  TPY or
    - **NET** significant increase of any attainment pollutant

## ▼ Step 2 – GHG Title V Sources

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- Beginning July 1, 2011
  - Continue with Step 1 and add Step 2
  - GHG alone can trigger title V requirements
  - Newly subject to title V if:
    - PTE of total GHG mass emissions  $\geq$  100 TPY,  
**AND**
    - CO<sub>2</sub>e (i.e., sum of GHG GWP)  $\geq$  100,000 TPY
  - Must include GHG applicable requirements when applying for new, renewal or revised title V permit

## ▼ Other Important Dates

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- Notification to Region 9 Regional Administrator by state or local permitting agency on or before Aug. 2 whether:
  - Agency would follow tailoring rule approach
  - OR**
  - Agency would revise existing rules to apply PSD or title V requirements if no existing authority to issue them
- No permits required for smaller sources until at least April 30, 2016

# ▼ Tailoring Rule Next Steps

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- Step 3: Other actions to be determined by July 1, 2012, via rulemaking
  - Potential additional phase-in and streamlining options
  - If Step 3 established, no permitting requirements for sources <50,000 tpy of CO<sub>2</sub>e
  - Consider permanent exclusion of certain smaller sources
- 5-year study to examine GHG permitting for smaller sources
  - Complete study by April 2015
  - Complete rule by April 30, 2016

# ▼ GHG BACT Issues / Approaches

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Consider whether they are BACT:

- Energy efficiency – systems approach, reducing energy losses (Russell City example)
- Alternative fuels – natural gas, biomass
- Raw material selection – feedstock types
- Process Design – basic design variations
  - Power generation – baseload vs. peaking units
  - Cement industry – dry process vs. wet process

# ▼ CAAAC Phase 1 Report Summary

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1. EPA RACT/BACT/LAER Clearinghouse and the EPA ORD database must be readily accessible, timely, complete, and adequately funded and staffed. NACAA will coordinate team membership phone calls among federal, state, and local agencies on the specific data points (including cost calculations for controls) regarding GHG determinations and will provide detailed recommendations regarding these databases.
2. Identification of source categories subject to BACT requirements for GHGs is essential. The ORD database should serve as a primary resource for data on source categories. RACT/BACT/LAER Clearinghouse should remain as the primary database documenting State and local permits.

# ▼ CAAAC Phase 1 Report Summary

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## (cont'd)

3. Steps to expedite streamline or provide additional certainty:
  - Use Existing BACT Determination Process
  - Presumptive BACT when starting BACT analysis. E.g., model or example permits for key source category, but separate from databases
  - Develop inventory of newly-subject GHG sources
4. Regularly scheduled training sessions for agencies/consultants/industries to address source operations and demonstrated energy efficiency improvement techniques



# Contact Information

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# Greenhouse Gases and Air Quality Permitting

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BIKE MORE RAKE MORE TELECOMMUTE  
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ERRANDS MORE RIDE PUBLIC TRANSPORTATION  
MORE USE ENERGY EFFICIENT APPLIANCES  
MORE CARRY REUSABLE TOTE BAGS MORE  
CONSIDER SOLAR MORE RUN COLD WATER  
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## GHG Tailoring Rule & Permitting – Outline:

- Overview of the Greenhouse Gas (GHG) Tailoring Rule
- Phased approach – Steps 1, 2, 3 and beyond
- Additional permitting in Maricopa County

## Overview of the GHG Tailoring Rule

- Final May 13, 2010
- “Tailors” existing regulations to establish a common sense approach for regulating GHG’s under the Clean Air Act (CAA)
- Applies permitting requirements from the CAA to facilities responsible for nearly 70 percent of national GHG emissions from stationary sources

## Overview of the GHG Tailoring Rule (cont.)

- Sets thresholds for six GHG's in terms of annual CO<sub>2</sub> equivalent (tpy CO<sub>2</sub>e):
  - Carbon dioxide (CO<sub>2</sub>)
  - Methane (CH<sub>4</sub>)
  - Nitrous oxide (N<sub>2</sub>O)
  - Hydrofluorocarbons (HFCs)
  - Perfluorocarbons (PFCs)
  - Sulfur hexafluoride (SF<sub>6</sub>)

# Greenhouse Gases

## Phase-In Steps: Step 1

- January 2, 2011 to June 30, 2011
- No new permitting actions due solely to GHG emissions during this period; only sources undertaking permitting actions anyway for other pollutants will need to address GHG
- PSD permitting applicability:
  - Sources will be subject to PSD requirements for GHG only if they trigger PSD for other pollutants anyway and increase GHG emissions by  $\geq 75,000$  tpy CO<sub>2</sub>e
- Title V permitting applicability:
  - Only sources already under a Title V permit will address GHGs, and only when renewing or revising their permit
- No sources will be subject to CAA permitting requirements based solely on GHG emissions during step1



# Greenhouse Gases

## Phase-In Steps: Step 2

- July 1, 2011 to June 30, 2013
- Sources subject to GHG permitting requirements under step 1 will continue to be subject to GHG permitting requirements
- In addition, sources that emit or have the potential to emit GHGs  $\geq 100,000$  tpy  $\text{CO}_2\text{e}$  will also be subject to GHG permitting requirements as follows
- PSD permitting applicability – triggered with construction that increases emissions
  - A newly constructed source of GHG will be subject to PSD if it emits  $\geq 100,000$  tpy GHG as  $\text{CO}_2\text{e}$
  - A modification at an existing major source will be subject to PSD if it results in a net GHG emissions increase of  $\geq 75,000$  tpy as  $\text{CO}_2\text{e}$

# Greenhouse Gases

## Phase-In Steps: Step 2 (cont'd.)

- Title V permitting applicability
  - A GHG emission source (which is not already subject to Title V) will not be subject to Title V unless it emits 100,000 tpy or more on a CO<sub>2</sub>e basis.
  - These newly subject sources must apply within 1 year after becoming subject to the program, unless the permitting authority sets an earlier deadline.
  - This means that newly subject sources must apply for a Title V permit on or before July 1, 2012 (one year after July 1, 2011).

# Greenhouse Gases

## Phase-In Steps: Step 3

- Step 3 is yet to be established
- The rule requires EPA to complete another GHG rulemaking no later than July 1, 2012
- EPA will consider, during the implementation of step 2, whether it will be possible to administer GHG permitting programs for additional sources
- EPA plans for step 3 to take effect on July 1, 2013
- If different from step 2, step 3 will not require permitting of sources with GHG emissions below 50,000 tpy CO<sub>2</sub>e
- EPA plans to explore a wide range of streamlining options and take comment on the step 3 proposal



# Greenhouse Gases

## Phase-in Steps: Further Action

- Further action beyond step 3 is yet to be established
- EPA will not require permits for smaller sources until April 30, 2016 or later
- The rule requires EPA to complete a study within 5 years projecting the administrative burdens associated with permitting of additional small sources and develop streamlining measures to lower these burdens
- EPA will use this study to direct its action to address additional small sources in a rulemaking to be completed by April 30, 2016
- EPA plans to solicit comment on a permanent exclusion of certain sources from PSD, Title V or both.



# Greenhouse Gases

## Phase-in Summary

- Step 1 (1/2/11): Sources already subject to PSD “anyway” for criteria pollutants
  - New source: NA
  - Modification: 75,000 (tpy CO<sub>2</sub>e)
- Step 2 (7/1/11): Sources already subject to PSD
  - New source: 100,000 (tpy CO<sub>2</sub>e)
  - Modification: 75,000 (tpy CO<sub>2</sub>e)
- Step 3 (7/1/13): Implementation of potential additional phase-in and streamlining options
- 5-year study to examine GHG permitting for smaller sources (1/1/16)
- Implementation of rule based on 5-year study (4/30/16)

## Effect on Maricopa County

- No anticipated PSD projects for GHG
- 19 Title V sources will be required to incorporate GHG's into their permits after 1/2/11 at the time of renewal / revision (5 of these are up for renewal within 12 months of 1/2/11)
- 15 Non-title V sources will be required to submit a Title V application within one year after 7/1/11
- These estimates cover phase-in steps 1 & 2

# Questions?

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MORE CONSERVE ELECTRICITY MORE REDUCE WOODBURNING MORE RECYCLE MORE REFUEL AFTER DARK MORE RIDE THE BUS MORE RIDE THE LIGHT RAIL MORE USE CFLS MORE

# Integrating Climate Change into Air Quality Planning

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# Overview

- What lies ahead for air quality planning
- Implications for air quality planning
- Multi-pollutant planning
- Climate Change and air quality interactions

# What Lies Ahead?

- Multiple EPA standards in review, most likely to change or be added:
  - Ozone health standard level
  - Separate ozone secondary welfare standard
  - 1-hour NO2 health standard added
  - NOx/SO2 combined secondary welfare (deposition)
  - Separate PM welfare (light extinction)
  - SO2 health standard

# Implications for Air Quality Planning

- Nonattainment for one or more NAAQS, and the required AQ planning will be closely spaced in time
- More stringent NAAQS suggest greater regional contribution
- Control measures – need multi-pollutant coordination
- Opportunity for multi-pollutant and multi-jurisdictional analysis and planning



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MORE CONSIDER SOLAR MORE  
REDUCE WOODBURNING MORE  
MORE RIDE THE BUS MORE

# Multi-Pollutant Planning Makes Sense

DRIVE MORE CONSOLIDATE  
REUSABLE TOTE BAGS  
CONSERVE ELECTRICITY MORE  
REFUEL AFTER DARK  
DRIVE MORE RAKE MORE

- Strategies & technologies that reduce GHGs can also reduce traditional pollutants
- Can help design cost-effective approaches that minimize burden on industry & maximize the use of state/county resources
- Can result in better environmental results at lower cost
- Promotes integrated energy & air quality planning

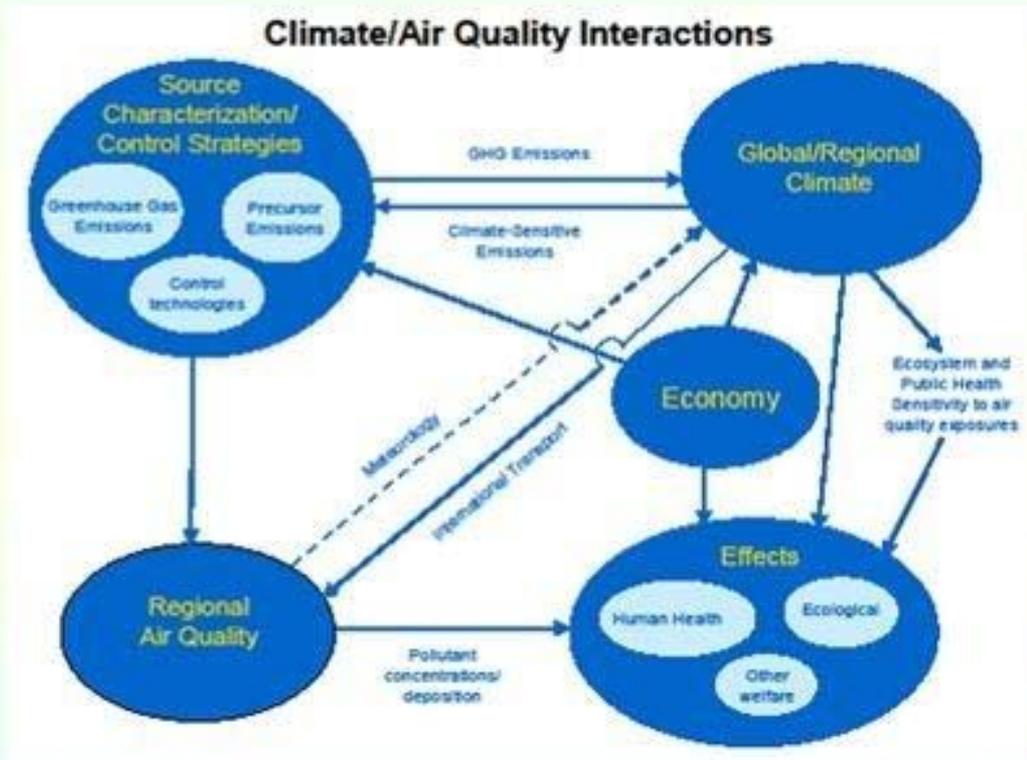


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# Climate Change and Air Quality

- Links between climate and air quality from emissions sources, atmospheric chemistry, mitigation strategies, and health and environmental outcomes
- From a policy perspective, essential to consider how actions in either arena will affect the other, and whether there are integrated, efficient strategies that can achieve climate and air quality goals simultaneously



# Questions?

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