



# GHG Permitting: Background, Applicability, and (Un)Intended Consequences

Prepared for AWMA-UMS

Clay Raasch

July 26, 2011

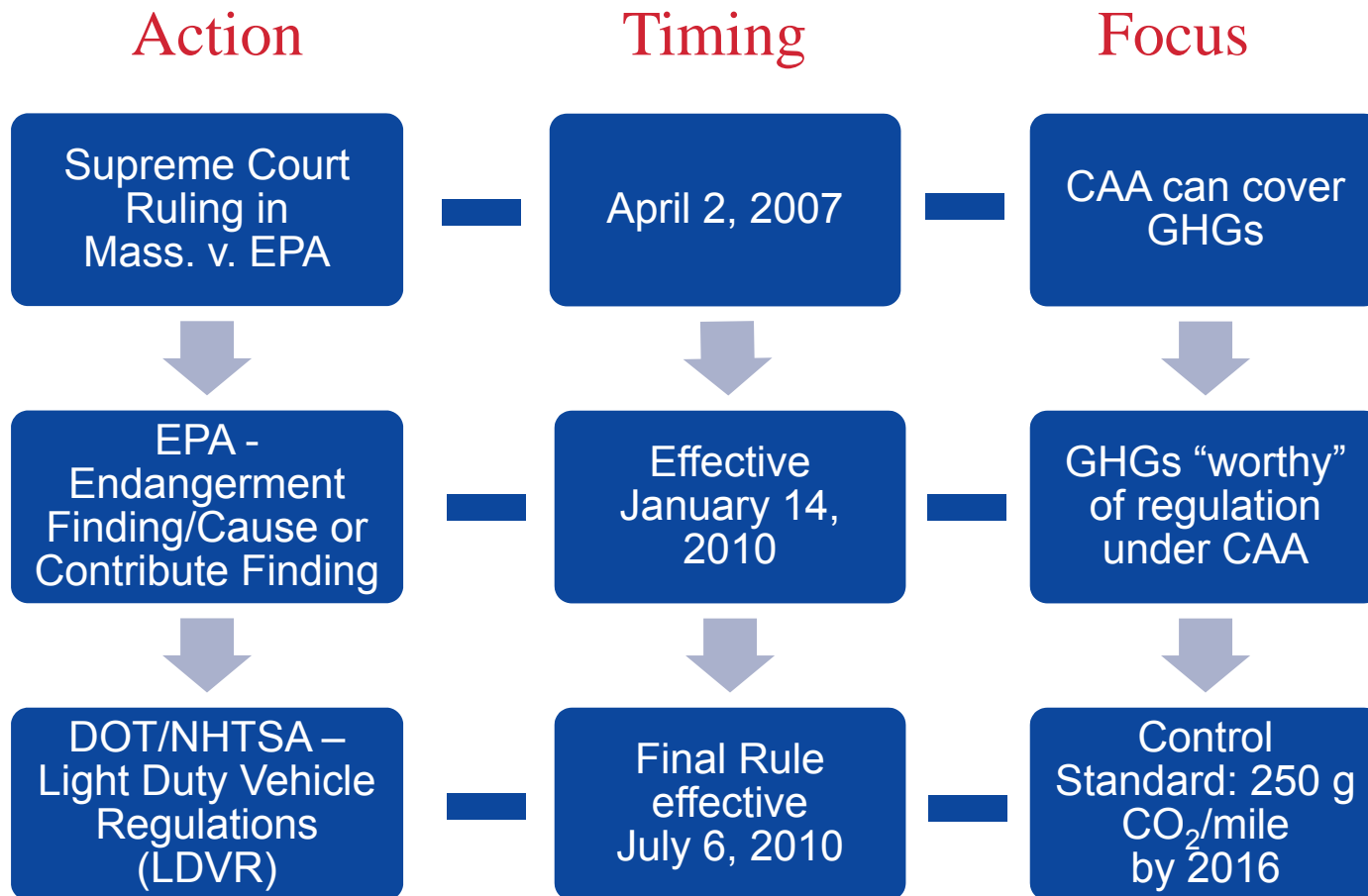


[trinityconsultants.com](http://trinityconsultants.com)

# Presentation Outline

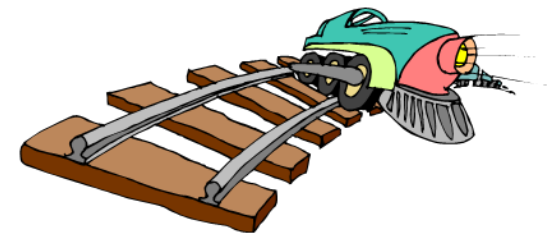
1. How did we get here? A **brief** history of NSR, and GHG litigation and regulation
2. The Tailoring Rule: What does it say? Does it spell relief? What are the Triggers?
3. (Un)Intended Consequences, and Changes in EPA Applicability Guidance

# GHG Cascade of Events



# Tailoring Rule Background

- Purpose: Avoid the “train wreck scenario” of major stationary source definition of 100 or 250 tpy, in CO<sub>2</sub> context
- Many legal challenges yet to be decided, but...
- If LDVR *and* TR prevail, regulatory relief of TR cannot be overstated



# No changes in Key PSD Terms

- Potential to Emit (PTE)
- Major Source
- Major Modification
- Calculating Emissions Increases
- Netting (Net Emissions Increase)

# Major Stationary Source: Definition

- 52.21(b)(1)(i)(a) – “Any of the following stationary sources of air pollutants which emits, or has the potential to emit, 100 tons per year or more of any **regulated NSR pollutant...**” [insert “list of 28”]
- 52.21(b)(1)(i)(b) – “Notwithstanding the stationary source size specified in paragraph (b)(1)(i) of this section, any stationary source which emits, or has the potential to emit, 250 tons per year or more of a **regulated NSR pollutant**”
- ...

Note: no mention of 100,000 tpy CO<sub>2</sub>e here...

# Major Modification

## 40 CFR 52.21(b)(2)(i)

*ANY physical change in or change in the method of operation of a major stationary source that would result in a significant net emissions increase...of a regulated NSR pollutant (as defined in paragraph (b)(50) of this section)*

...

# PSD Significant Emissions\*

## 40 CFR 52.21(b)(23)(i)

<u>Pollutant</u>	<u>Significant Emissions (tons/year)</u>
Carbon monoxide	100
Nitrogen oxides	40
Sulfur dioxide	40
PM <sub>10</sub>	15
PM <sub>2.5</sub>	10
VOCs	40
Lead	0.6
...	

Note: no mention of 75,000 tpy CO<sub>2</sub>e here...

# Additional definition of significant 40 CFR 52.21(b)(23)(ii)

*“Significant means, in reference to a net emissions increase or the potential of a source to emit a regulated NSR pollutant that paragraph (b)(23)(i) of this section does not list, **any** emission rate.”*

# What is “Regulated NSR Pollutant”?

See 40 CFR 52.21(b)(50)

- Pollutant covered by NAAQS or precursor
  - ◆  $PM_{10}$ ,  $PM_{2.5}$ ,  $SO_2$ ,  $NO_x$ , CO, Pb,  $O_3$ , VOC
- Pollutant covered by a NSPS
  - ◆  $H_2S$ , TRS,  $H_2SO_4$ , Fluorides, etc.
- Ozone depleting substances
- Any pollutant that otherwise is “subject to regulation under the Act”
- HAPs are excluded unless regulated as constituent or precursor of above categories

# “Subject to Regulation under the Act”

See 40 CFR 52.21(b)(49)

- Subject to provision in CAA or nationally-applicable regulation
  - ◆ Such as the April 2010 Light Duty Vehicle rule....
- Additional criteria added for GHGs for phases of Tailoring Rule:
  - ◆ Step 1:
    - 75,000 tpy CO<sub>2</sub>e increase for “PSD anyway” project
  - ◆ Step 2:
    - Step 1 criteria OR,
    - New Sources: PTE ≥ 100,000 tpy CO<sub>2</sub>e, OR
    - Existing Sources: Existing PTE ≥ 100,000 tpy CO<sub>2</sub>e **AND** 75,000 tpy CO<sub>2</sub>e emissions increase

# Tailoring Rule Mashup

- GHGs 1 – Began on January 2, 2011.
  - ◆ New major source of at least one non-GHG regulated pollutant and a threshold level of 75,000 tpy of GHGs(CO<sub>2</sub>e) and >0 tpy (mass based)
  - ◆ Modification - Existing source of at least one non-GHG regulated pollutant and a net significant emissions increase of a non-GHG pollutant and at least 75,000 tpy (CO<sub>2</sub>e) emissions/net emissions increase of GHGs and >0 tpy (mass based)
- Step 2 – Begins on July 1, 2011.
  - ◆ And Step 1 source/modification above
  - ◆ Any new source that emits or has potential to emit 100,000 tpy (CO<sub>2</sub>e) of GHGs (at least 100/250 tpy mass based)
  - ◆ Modification – Any existing source of at least 100,000 tpy (CO<sub>2</sub>e) (and at least 100/250 tpy mass based emissions) that modifies such that there will be a 75,000 tpy (CO<sub>2</sub>e) emissions/net emissions increase of GHGs (and >0 tpy mass based)

# Implications of Method Used to Modify PSD Regulations for Tailoring Rule

- “Subject to Regulation” definition no longer simply common sense, but a conscious first step; by nature, a project-specific term
- Unless a project meets the CO<sub>2</sub>e thresholds, GHGs are not “subject to regulation”, and thus....
  - ◆ Not a “regulated NSR pollutant” (for the project)
  - ◆ 100/250 tpy thresholds do not apply to GHGs
  - ◆ GHG emissions are not part of major source definition
  - ◆ PSD source classification is unaffected by GHG emissions

# Tailoring Rule Bottom Line

- Tailoring Rule introduces new thresholds for defining when GHGs become a regulated NSR pollutant
- The Tailoring Rule (along with recent EPA guidance) make it clear that determining whether GHGs are regulated under PSD is a project-specific consideration
  - ◆ See EPA 3/11 guidance on a GHGs subject to regulation—AND THEN NOT for a subsequent project
- The Tailoring Rule can affect PSD applicability process for “traditional” regulated NSR pollutants

# Three (Traditional) Means to Trigger PSD: PSD Applies If....

- New Sources: Plant will be a major source  
(>major source threshold of 100 or 250 tons/year)
- Existing Minor Sources: Make a modification that in itself is “major”  
(> major source threshold of 100 or 250 tons/year)
- Existing Major Sources: Make a modification that exceeds de minimis levels (also called PSD Significant Emission Rates); a “major modification”
  - ◆ Existing major sources may “net-out” of PSD review

# Two additional means to regulate GHGs under PSD: PSD Anyway sources (applies starting Jan. 2, 2011)

- New sources subject to PSD for non-GHG pollutant(s), with PTE of GHGs at or above 75,000 tpy CO<sub>2</sub>e
- Existing sources that make a modification that a) is subject to PSD for non-GHG pollutants and b) has GHG emissions increase of 75,000 tpy CO<sub>2</sub>e or more
  - ◆ Existing major sources may “net-out” of PSD review

# Now: New Ways to Trigger PSD

(1/2)

- After July 1, 2011, new sources with PTE > 100,000 tpy CO<sub>2</sub>e, and GHGs on a mass basis over 100 or 250 tpy

(akin to item 1 on previous Three Means to Trigger PSD slide)

- After July 1, 2011, existing sources with plantwide PTE > 100,000 tpy CO<sub>2</sub>e that make a modification that is above 75,000 tpy CO<sub>2</sub>e (and 0 tpy GHGs on a mass basis)

(> akin to item 3 on previous Three Means to Trigger PSD slide)

# Now: New Ways to Trigger PSD\*

(2/2)

- After July 1, 2011, existing minor sources with net emissions increase  $> 100,000$  tpy CO<sub>2</sub>e, and of GHGs on a mass basis over 100 or 250 tpy

(akin to item 2 on previous Three Means to Trigger PSD slide)

\* Following EPA's Nov 10, 2010 and March 15, 2011 guidance at <http://www.epa.gov/nsr/ghgpermitting.html>

# EPA Guidance on PSD Applicability

Table II-A. Summary of PSD Applicability Criteria for **New Sources** of GHGs

Permits issued from January 2, 2011, to June 30, 2011	Permits issued on or after July 1, 2011
<p>PSD applies to GHGs, if all of these conditions are met:</p> <ul style="list-style-type: none"><li>• The source is otherwise subject to PSD (for another regulated NSR pollutant)</li><li>• The source has a GHG PTE equal to or greater than:<ul style="list-style-type: none"><li>○ 75,000 TPY CO<sub>2</sub>e</li></ul></li></ul>	<p>PSD applies to GHGs, if all of these conditions are met:</p> <ul style="list-style-type: none"><li>• The source is otherwise subject to PSD (for another regulated NSR pollutant)</li><li>• The source has a GHG PTE equal to or greater than:<ul style="list-style-type: none"><li>○ 75,000 TPY CO<sub>2</sub>e</li></ul></li></ul> <p><b>OR</b></p> <ul style="list-style-type: none"><li>• Source has a GHG PTE equal to or greater than:<ul style="list-style-type: none"><li>○ 100,000 TPY CO<sub>2</sub>e, and</li><li>○ 100/250 TPY mass basis</li></ul></li></ul>

From EPA Permitting Guidance for GHGs, 11/2010.

# EPA Guidance on PSD Applicability

Table II-B. Summary PSD Applicability Criteria for **Modified Sources** of GHGs

Permits issued from January 2, 2011, to June 30, 2011	Permits issued on or after July 1, 2011
<p><b>PSD Applies to GHGs, if:</b></p> <ul style="list-style-type: none"> <li>• Modification is otherwise subject to PSD (for another regulated NSR pollutant), and has a GHG emissions increase and net emissions increase:               <ul style="list-style-type: none"> <li>○ Equal to or greater than 75,000 TPY CO<sub>2</sub>e, and</li> <li>○ Greater than -0- TPY mass basis,</li> </ul> </li> </ul>	<p><b>PSD Applies to GHGs, if:</b></p> <ul style="list-style-type: none"> <li>• Modification is otherwise subject to PSD (for another regulated NSR pollutant), and has a GHG emissions increase and net emissions increase:               <ul style="list-style-type: none"> <li>○ Equal to or greater than 75,000 TPY CO<sub>2</sub>e, and</li> <li>○ Greater than -0- TPY mass basis</li> </ul> </li> </ul> <p><b>OR BOTH:</b></p> <ul style="list-style-type: none"> <li>• The existing source has a PTE equal to or greater than:               <ul style="list-style-type: none"> <li>○ 100,000 TPY CO<sub>2</sub>e and</li> <li>○ 100/250 TPY mass basis</li> </ul> </li> <li>• Modification has a GHG emissions increase and net emissions increase:               <ul style="list-style-type: none"> <li>○ Equal to or greater than 75,000 TPY CO<sub>2</sub>e, and</li> <li>○ Greater than -0- TPY mass basis</li> </ul> </li> </ul>

Basis in rule language?

**OR BOTH:**

- The source is an existing minor source for PSD, and
- Modification alone has actual or potential GHG emissions equal to or greater than:
  - 100,000 TPY CO<sub>2</sub>e, and
  - 100/250 TPY mass basis

From EPA Permitting Guidance for GHGs, 11/2010.

# Tailoring Rule –Timing

- Minor permitting actions must “begin actual construction” by 7/1/2011 to avoid Step 2 GHG requirements (even if permit issued before 7/1/2011)

# Tailoring Rule Effect: Thought Questions

- Can/Will Tailoring Rule result in an increase in the number of projects subject to PSD?\*
- Can/Will Tailoring Rule result in an increase in the number of projects subject to PSD for criteria pollutants?\*
- Can/Will Tailoring Rule result in projects subject to PSD for ONLY criteria pollutants?\*
- What happens to TR regulatory relief when the first GHG NSPS is finalized?

\*relative to that period prior to LDVR/GHG cascade

# Tailoring Rule and non-GHG PSD applicability

- Additional ways to trigger PSD via 52.21(b)(49)(v).
- Tailoring rule changes can cause a 2010 non-PSD project to be subject to PSD for non-GHGs were that project to occur in 2012
- See PSD Applicability Matrix for GHGs and non-GHGs in light of Tailoring Rule Changes (handout)

# Tailoring Rule – Title V Applicability

- As with PSD, GHG thresholds for Title V apply to sum of 6 GHGs:
  - ◆ 100 tpy on a mass basis
  - ◆ 100,000 tpy CO<sub>2</sub>e
- Step 1 – Effective Jan. 2, 2011
  - ◆ *Anyway* Title V sources applying for, renewing, or revising a Title V permit (based on criteria pollutant emissions) AND exceeding both GHG thresholds
- Step 2 – Effective July 1, 2011
  - ◆ Possible to trigger Title V solely on the basis of GHG PTE if both GHG thresholds above are exceeded
  - ◆ If permitting triggered for GHGs only, must submit Title V application within 12 months of triggering requirement
    - Example: If existing facility triggers Title V permitting for GHGs on 7/1/2011, must submit permit application by 7/1/2012

# Biogenic Carbon Deferral

- January 12, 2011: EPA announces proposal to defer GHG permitting requirements for CO<sub>2</sub> emissions from biomass-fired and other biogenic sources
- Pre-publication rule issued July 1, 2011
- Second rulemaking for biomass combustion by end of 3-year period

# Regulatory Deferral, cont.

- Sources covered by this decision include those burning forest or agricultural products for energy, wastewater treatment and livestock management facilities, landfills and fermentation processes for ethanol production.

# Conclusion

- Tailoring Rule introduces new thresholds for defining when GHGs become a regulated NSR pollutant under PSD and NSR
- The Tailoring Rule (along with recent EPA guidance) make it clear that determining whether GHGs are regulated under PSD is a project-specific consideration
  - ◆ GHGs “once regulated” are not necessarily “always regulated”
- From TR preamble, some differences in treatment of GHGs vs non-GHGs appear unintentional