



## Greenhouse Gas Updates

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SC SWANA Fall Conference  
Monks Corner, SC  
November 10, 2010

# Agenda

Domestic GHG Trading Market Status

PSD/Title V Tailoring Rule Status

Federal GHG Monitoring Requirements

# Domestic GHG Market Status

# GHG Market Updates

- Domestic voluntary marketplace basically down to using two protocols
  - Climate Action Reserve (CAR)
  - Voluntary Carbon Standard (VCS)
- Market uncertainty due to Federal (in)activities
  - PSD/Tailoring Rule implementation
  - Future congressional action on GHG's

# GHG Pricing

- Spot Market
  - Very illiquid
  - ~ \$3 per ton or less
- Longer term agreements (~5 years)
  - \$5-6 per ton at upper end
- Some special situations are getting high value for LF owners
- CCX – Closing shop at end of 2010
- Buyers looking for longer term deals
  - multi-year agreements
  - GHG futures still hold value
- GHG sale structures on the back end are getting more complex

# Eligibility Criteria

- GHG protocols have changed to only allow new projects to be eligible
- CAR – Must register project with CAR within 6-months of start-up
- VCS – Must validate within 2 years of project start-up

# Voluntary Carbon Standard

- Potential alternative for projects that do not qualify for CAR
  - Early action at NSPS sites
  - Non-qualifying flare capacity issue
- Must use continuous methane monitors, updated CDM methodology no longer allows for periodic measurement of methane
- Project Design Document needed for validation is much more complicated than CAR application process

# What are GHG Developers Interested in?

- Flaring only projects
  - Limited interest
  - LF's must have significant GCCS investment already in place
  - Multi-year agreements
- Combination GHG and LFGE Projects
  - Still have strong interest
  - Some developers require generation  $\geq 2$  MW
  - Some GHG developers moving into LFGE developer roles and investigating projects w/o GHG's
  - Smaller LFGE projects can be difficult to justify financially

# GHG Projects at SC LF's

- Berkeley County (CAR)
- Greenville County (Enoree)
  - 105,313 tons CAR
  - 151,922 VCS
- Greenwood County (CAR)
- Spartanburg County
  - VCS, under development



# Future of GHG Markets?

- Will be influenced by Federal action on GHG's
  - Next Congress
  - Could Congress move to suspend or halt EPA from regulating GHG's?
  - Offset treatment under PSD for compliance?
- California
  - Proposition 23 – defeated 11/2/10
  - Would have suspended GHG program (including renewable energy requirements) until unemployment dropped below 5.5 percent
- Developers still interested in GHG/LFGE project development



# PSD/Title V Tailoring Rule Status

# Background

- Since applying the 100/250\* tpy threshold to GHGs (now a “regulated pollutant”) would be unworkable because of the millions of new permits that would result, EPA needs to “tailor” interim major source thresholds and levels of significance

\* 100 tpy only applies to Title V program

# Rule Overview

- Effective date – 1/2/11
- Rule will be implemented in a “Stepped Approach”
- Step 1 – January 2, 2011
- Step 2 – July 1, 2011
- Step 1 & 2 phase-in GHG major source thresholds for PSD/Title V applicability between 75,000 and 100,000 tpy CO<sub>2</sub>e

# Rule Overview

- Steps 3 and 4 – 7/1/12 to 4/30/16
- Evaluation of smaller sources
- Streamlining options
- Project administrative burdens of regulating smaller sources
- Potential development of future rulemakings

# Landfill Impacts

- Under Step 1, landfills with existing Title V permits will have to include GHGs if revisions or updates occur (no new control requirements)
- Unlikely that many landfills would be impacted by PSD under Step 1
- Under Step 2, larger landfills without Title V permits will need Title V permits
  - Triggering thresholds will depend upon how EPA addresses fugitives and/or biogenic CO<sub>2</sub>

# Landfill Impacts

- Under Step 2, landfills will be subject to PSD if:
  - New landfill with PTE  $\geq$  100,000 tpy CO<sub>2</sub>e
  - Landfill expansion or new LFG combustion device  $\geq$  100,000 tpy CO<sub>2</sub>e at minor PSD source
  - Landfill expansion or ne LFG combustion device  $\geq$  75,000 tpy CO<sub>2</sub>e at major PSD source
  - Landfills would also have to evaluate increases in other non-GHG emissions

# Issues

- What is required when PSD and Title V are triggered for GHGs?
- Fugitive emissions – do they count?
- Biogenic emissions – can we avoid counting them?
- Additional monitoring
- BACT

# What is Required When PSD and Title V are Triggered for LF's

## PSD

- A GHG BACT review
- What BACT is for waste management facilities is undefined
  - SWANA representatives are working with EPA on the BACT issue
  - Suggestions will include:
    - Current NSPS/MACT for landfills
    - Or NSPS plus early installation of collectors

# What is Required When PSD and Title V are Triggered for LF's

## PSD

- Triggering PSD for GHGs can “drag” in other pollutants (or vice-versa)
- The review for other pollutants will follow existing PSD requirements including:
  - BACT review
  - Ambient Air Analysis
  - Impact on Class I areas

# What is Required When PSD and Title V are Triggered for LF's

## Title V

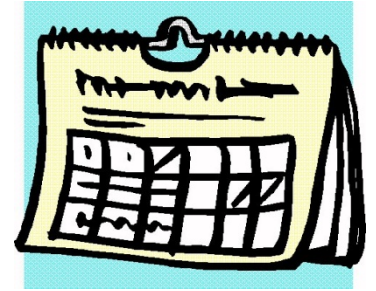
- Title V does not develop any new control requirements
- Monitoring requirements from mandatory reporting could be included (pay attention to draft permits)
- Additional periodic monitoring can be included

# What Clarifications from EPA are Needed?

- Verify method of calculating PTE
  - Especially for fugitives
- BACT determinations for landfills
- Industry representatives met with EPA on July 20, 2010
- EPA has put out an information request related to landfill BACT and NSPS revisions (due August 12, 2010)

# Federal GHG Reporting

# Key Dates



- January 30, 2011 – Submit certificate of representation to EPA.
- March 31, 2011 – Submit 2010 emissions report to EPA.

# Federal GHG Reporting

- Frequently answered questions (FAQ) now listed in a searchable database  
[http://www.epa.gov/climatechange/emissions/ghg\\_faq.html](http://www.epa.gov/climatechange/emissions/ghg_faq.html)
- Flow should be corrected to 60° F, NOT STP, which EPA defines as 68° F per 98.346(i)(1)
- Portable methane analyzers using infrared (e.g. Landtec GEM-2000) are acceptable
  - Still requires annual correction factor testing
- Other Stationary Combustion
  - Subpart HH Landfills must report
  - Mobile, portable, emergency, etc. exempt
  - Small stationary sources must be reported

# On-Going Considerations

- Follow your monitoring plan
- Calibrate monitoring equipment per manufacturer's specs or rule
- Track operating hours and downtime of control devices
- Make sure all gas is accounted, including gas sent to third party
- Keep operating hours and fuel usage data for stationary combustion sources

# Closing

- GHG markets still exist and landfills can still generate revenue
- Pay attention to PSD/Title V GHG applicability
- Follow legislative and EPA actions related to GHG's
- Begin preparation for first GHG inventory report

# Questions?

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