Manure Management Strategies

Stationary Source Division
April 14, 2008
Overview

- Today’s Goal
- Background
- Information Gathered to Date
- Request Stakeholder Feedback
- Next Steps
Today's Goal

- Present Information Gathered to Date
  - Cost of practices and technologies
  - Research
  - Existing voluntary agreement

- Request Stakeholder Feedback
Assembly Bill 32 (AB 32)

- AB 32 aims to reduce greenhouse gas (GHG) emissions to 1990 levels by the year 2020.
- Requires that the ARB develop GHG reduction strategies that do not interfere with existing air pollution control measures.
The AB 32 Scoping Plan will outline the main strategies California will use to reduce GHGs.

- Draft plan will be released for public review and comment.
- Needs to go to the Board for adoption.

Manure Management Strategies is one of the GHG reduction measures being evaluated for the agriculture sector of the Scoping Plan.
Activities To Date

- First Public Consultation Meeting
- Getting Out Into the Field (14 tours)
- Agriculture Related Conferences
- Information Gathering
  - Associations
  - Government agencies
  - Producers
  - Researchers
  - Vendors
Information Gathering

- Affected Operations
- Existing Regulations
- Practices
- Technologies
- Cost
- Research
- Existing Voluntary Agreements
Manure Management Emissions

- GHGs
  - 1990 Levels
    - 5 MMT CO₂ E (1.2% of total GHG inventory)
  - 2004 Levels
    - 7 MMT CO₂ E (1.4% of total GHG inventory)
Background

Potential Options

• Reduce uncontrolled methane emissions (by maximizing **aerobic** conditions).
• Optimize the production of methane (by maximizing **anaerobic** conditions).
• Optimize resource recovery by collecting and cleaning digester gas.
• Optimize resource recovery by drying the solid fraction of manure prior to use in a conversion process.
• Maximize the on-site use and off-site sale of residuals.
• Optimize resource recovery by using efficient engines and waste heat recovery.
Information Gathering

- Affected Operations
- Existing Regulations
- Practices
- Technologies
- Cost ✓
- Research ✓
- Existing Voluntary Agreements ✓
Cost Information

Who Was Contacted:

- AgSTAR Industry Directory
- Construction/Earthmovers
- Dairy Methane Digester System Program Evaluation Report (CEC PIER Program)
- Equipment Manufacturers/Distributors
- Project Developers
- Utility Companies
Cost Information

What We Talked About:

- Construction
- Digester and gas production enhancements
- Energy conversion
- Gas handling
- Manure collection and pretreatment
- Utility interconnection
Research

Who We Talked to:
- ARB Research Division
- ASABE
- San Joaquin Valley APCD
- USDA
- Universities
- Industry Associations
Categories We Identified:

- Air modeling
- Air monitoring
- Practices evaluation
- Technology evaluation
**Existing Voluntary Agreement**

- **Rocky Mountain National Park Nitrogen Deposition Reduction Plan**
  - Emphasis on voluntary reductions, best management practices, and benefits from current practices
  - Planned contingency measures
  - Continuous evaluation of progress towards plan goals, effectiveness of mitigation measures, and future needs of mitigation measures
Request Stakeholder Feedback

- Evaluate Our Information
- Identify Additional:
  - Practices and technologies
  - Cost information
  - Voluntary agreements
  - Research
Request Stakeholder Feedback

- Get Back to Us by May 16, 2008
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  - Mr. Dan Weller (916.327.0481)
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Next Steps

- Follow-up on Stakeholder Feedback
- Additional Field Visits
- AB 32 Scoping Plan
- Propose Strategies