

Non-CO₂ Greenhouse Gas Offset Projects: Basic Considerations

Karl H. Schultz

Climate Mitigation Works International LLC

Panel Three: Design Issues

RGGI Stakeholder Workshop on GHG Offsets

New York

25 June 2004



Non-CO₂ Offsets? Conclusions Up Front

- ◆ Non-CO₂ accounts for majority of current GHG offsets
- ◆ Many non-CO₂ sources are difficult to cap, but may be good as offsets
- ◆ Offer flexibility, environmental integrity, and lower costs to a compliance regime
- ◆ May wish to consider starting with introduction of most “straightforward” sources, expand offset regime later

What are the “Other Gases”?

- ◆ Methane (CH₄)
- ◆ High GWP Gases (HFCs, PFCs, SF₆)
 - including substitutes for ozone depleting substances and industrial gases
- ◆ Nitrous Oxide (N₂O)
- ◆ Ozone Depleting Substances (CFCs, HCFCs)
 - phased out by the Montreal Protocol
- ◆ Aerosols
- ◆ Ozone and its precursors (CO, VOC, NO_x)



“Kyoto Gases”

Non- CO₂ gases in today's global offset markets

- 63% of total volume involve non-CO₂ gases
- World Bank: marginal non-CO₂ projects may become economic with carbon finance added

Source: World Bank
Prototype Carbon Fund

Source Overview: some “straightforward offsets”

- ◆ Methane, High GWP gases: several good offset opportunities
- ◆ Nitrous Oxide: more complicated as offsets
- ◆ Will discuss a few viable offset types

Landfill Methane as Offset

- ◆ Methane may be used for energy or waste reduction lowers emissions
- ◆ Largest U.S. methane source and global methane offset
- ◆ Baseline, additionality, monitoring and verification methodologies exist
- ◆ In U.S. (and elsewhere) large landfills already regulated (therefore not additional)
- ◆ Smaller landfills may be excellent offsets
- ◆ Plenty of opportunities in RGGI area

Coal Mine Methane as Offset

- ◆ Methane produced during mining may be harnessed for energy
- ◆ High quality source of offsets
 - Baseline, additionality, monitoring and verification methods developing
 - Questions of timing of avoided emissions need to be addressed
- ◆ Oxidation of ventilation air methane: highly additional
- ◆ Offsets need to be outside of RGGI area

Natural Gas Systems as Offsets

- ◆ Reduction of methane leaks from production through distribution
- ◆ Offset methodologies exist
- ◆ Vast number of technical, operational opportunities for reductions
 - Complex but could easily start with most agreeable technical options
- ◆ Mitigation potential in RGGI area

Manure Management and Offsets

- ◆ Recovery and use of methane from large farms
- ◆ Establishing good methodologies possible
- ◆ Baseline question important
 - Dry manure, if liquified, increases CH₄
- ◆ May be potential in RGGI area

High GWPs as offsets: some straightforward opportunities

- ◆ HFC 23 decomposition:
 - (By-product of coolant production) methodologies established and totally additional
- ◆ PFC reductions from aluminium production:
 - Easy to quantify and establish additionality
- ◆ SF₆ offsets from electricity transmission and distribution systems
 - Leak reduction quantifiable
 - Capped RGGI utilities may take direct actions

Benefits from Inclusion of Non-CO₂ Gases

- ◆ Non-CO₂s may cost effectively contribute as much or more as CO₂ to stabilization of GHGs over next 50 years
- ◆ Lower average cost of compliance and/or allow for more aggressive caps
- ◆ Improved air quality (tropospheric ozone, air toxics, VOCs)
- ◆ Many other co-benefits (safety, local energy supply, economic, etc.)
- ◆ Study of specific technical options will identify many environmentally additional offsets

Contacts:

Karl Schultz

Telephone: +44 (0) 207 354 3595

Karl@climate-mitigation.com

Climate Mitigation Works:

www.climate-mitigation.com

Energy Edge:

www.energyedge.net

ENERGY EDGE

Non-CO2 Greenhouse Gas Offset Projects: Basic
Considerations

