Protocols for Livestock and Landfill Projects in Mexico

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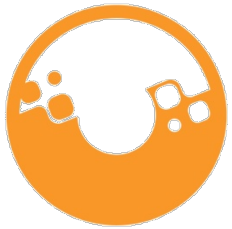

CLIMATE ACTION RESERVE

Workshop on Mexico Carbon Offset Projects

Mexico City, DF | August 4, 2010

Methane protocols for Mexico

CLIMATE ACTION RESERVE

- Adopted by the Reserve Board of Directors July 1, 2009
- Adapted over a six-month period from the existing Livestock and Landfill protocols for the United States
- Apply only in Mexico, but otherwise projects and CRTs are handled no differently than U.S. projects and CRTs

CLIMATE ACTION RESERVE

Mexico version 1.0

LIVESTOCK PROJECT PROTOCOL

Livestock workgroup

Cappy Mex	CYSTE	Instituto de Investigaciones Económicas, UNAM
Comisión de Cooperación Ecológica Fronteriza (COCEF)	Ecosecurities	Instituto de Investigaciones Eléctricas (IIE)
Comisión de Estudios del Sector Privado para el Desarrollo Sustentable (CESPEDES) (BCSD-México) – Programa GEI México	El Colegio de la Frontera Norte	Instituto Nacional de Ecología (INE-SEMARNAT)
Confederación Mexicana de Porcicultores (Gestión Ambiental)	Estado de Chihuahua	Instituto Nacional de Investigaciones Forestales, Agrícolas y Pecuarias (INIFAP-SAGARPA)
Confederación Mexicanos de Porcicultores	Estado de Coahuila	SEMARNAT – Programa GEI México
Confederación Mexicanos de Porcicultores (Mérida, Yucatán)	Estado de Nuevo Leon • Estado de Sonora	SEMARNAT – Proyectos para Cambio Climático
Consultor Independiente	Fideicomiso de Riesgo Compartido (FIRCO-SAGARPA)	SEMARNAT – Regulación Ambiental Agropecuaria
	Grupo Porcicola Mexicano	Secretaría de Energía (SENER)

Project definition

- Installation of an operational biogas control system (BCS) that captures and destroys methane (CH_4) gas from manure treatment and/or storage facilities on livestock operations
- Includes:
  - Centralized digesters
  - Lagoon covers
  - Above/below-ground in-vessel digesters
  - Co-digestion of manure with other feedstocks

Gas destruction options

- **On-site**
  - Open or enclosed flare
  - Electric generator
  - Boiler
  - Fuel cell
  - Micro turbine
- **Off-site**
  - Pipeline injection
  - Vehicle fuel

Eligibility

1. Location	Mexico
2. Start date	No more than six months prior to project submission to the Reserve
3. Regulatory compliance	Must meet all applicable environmental regulations
4. Additionality	Must meet regulatory and performance tests for additionality

Additionality

- **Regulatory test**
  - Project must meet an *annual* test demonstrating project reductions would not have occurred as a result of national, state or local regulations
- **Performance standard**
  - Installation of the BCS for destruction of methane from cow or pig manure
  - Baseline condition must have been open, uncontrolled anaerobic storage in a lagoon, tank, or other similar system

Co-digestion

- It is allowable to add other organic waste in with the manure
- The baseline calculation will only account for the avoided emissions from manure management
- In the future we will have a protocol to account for avoided methane from other organic waste streams

Monitoring and metering

- Gas flow
  - Continuous flow measurement to all destruction devices
- Methane concentration
  - Continuous methane concentration readings or quarterly sampling
- Operational records
  - Must know when the destruction device is on or off
- All corrected to standard temperature and pressure

Crediting

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CRTs = Baseline emissions – Project emissions

- Baseline emissions are calculated on a monthly basis using a model of the emissions that would have been generated by the previous manure management system
- Project emissions include fugitive emissions from the BCS, any methane releases, and fossil fuels used onsite for the project
- Must be quantified and reported at least once every 12 months
- Crediting period of 10 years

Verification

- Must hire a verification body that has been trained and approved by the Reserve
- Site verification at least once every 12 months
- May verify more frequently
- CRTs only issued after successful verification

Update

- Version 2.0 is now available for public comment from our website

CLIMATE ACTION RESERVE

Mexico version 1.0

LANDFILL PROJECT PROTOCOL

Landfill workgroup

Cappy Mex	Instituto Nacional de Ecología (INE-SEMARNAT)	SEISA
Comisión de Estudios del Sector Privado para el Desarrollo Sustentable	Ecológica Fronteriza (COCEF)	Comisión de Cooperación
CYSTE	Consulting Pechan	(CESPEDES) (BCSD-México) – Programa GEI México
Ecosecurities	Municipio de Chihuahua	Secretaría de Medio Ambiente y Recursos Naturales (SEMARNAT)
Estado de Chihuahua	Municipio de Nogales	SEMARNAT – Programa GEI México
Estado de Coahuila	Municipio de Nuevo Laredo	SIMEPRODE
Estado de Nuevo Leon	PASA	Sistemas de Ingeniería y Control Ambiental
Estado de Sonora	PROACTIVA	TECMED
ETEISA	SCS Engineers	U.S. EPA M2M (Methane to Markets)
Instituto de Investigaciones Eléctricas (IIE)	Secretaría de Desarrollo Social (SEDESOL)	Universidad Autonoma Baja California

Project definition

- Installation of a system for capturing and destroying methane gas emitted from a landfill
- Gas destruction
  - On-site or off-site
- Crediting period
  - 10 years or until failure of regulatory test

Eligibility

1. Location	Mexico
2. Start date	No more than six months prior to project submission to the Reserve
3. Regulatory compliance	Must meet all applicable environmental regulations
4. Additionality	Must meet regulatory and performance tests for additionality

Additionality

- **Regulatory test**
  - Project must meet an *annual* test demonstrating project reductions would not have occurred as a result of national, state or local regulations
  - Compliance with NOM-083 is accounted for under the protocol by application of a 7% discount factor
- **Performance standard**
  - Installation of active LFG collection and destruction system above and beyond any prior LFG collection and destruction that may have existed at the site
  - No discount for landfills that were passively venting gas

Pre-existing systems

- If there was active landfill gas destruction on-site before the project
  - Deduction from final gas flows for the entire capacity of the previous system
  - Includes centralized collection systems and wells with individual flares

Monitoring and metering

- Gas flow
  - Continuous flow measurement to all destruction devices
- Methane concentration
  - Continuous methane concentration readings
  - It is possible to measure less frequently and use a discount
- Operational records
  - Must know when the destruction device is on or off
- All corrected to standard temperature and pressure

Crediting

CRTs = Methane captured minus deductions:

- 10% deduction for soil oxidation if there is no synthetic liner
- Deduction for methane that would have been destroyed in compliance with NOM 083
- Deduction for any pre-project destruction device

Exclusions

- Any collection and destruction that was necessary to meet regulatory requirements
- Displacement of fossil fuel consumption associated with production of electric power or pipeline gas injection
- Other GHG reductions in waste management activities not associated with the installation of the LFG collection and destruction system

Verification

- Must hire a verification body that has been trained and approved by the Reserve
- Site verification at least once every 12 months
- May verify more frequently
- CRTs only issued after successful verification

Contact information

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We have Spanish language assistance available