CLIMATE ACTION RESERVE

Public Kick-Off Meeting:
Dominican Republic Livestock Protocol

January 26, 2023

Introduction

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Housekeeping

- All attendees are in listen-only mode
- Please submit your questions in the Zoom question box and we'll try to answer them at the end, time permitting
- We will follow up via email to answer any questions not addressed during the meeting
- The slides and a recording of the presentation will be posted online on the Climate Action Reserve webpage

AGENDA

- Climate Action Reserve
- Background on the livestock industry in the Dominican Republic
- Protocol development process/timeline
  - REMINDER:
    - Statements of Interest for the technical workgroup due on **February 3, 2023**
    - Stakeholder Engagement Forms available
- Key considerations for protocol development
  - Project definition
  - Project ownership
  - Additionality
  - Permanence
  - Quantification
  - Monitoring / reporting / verification
- Next steps

CLIMATE ACTION RESERVE

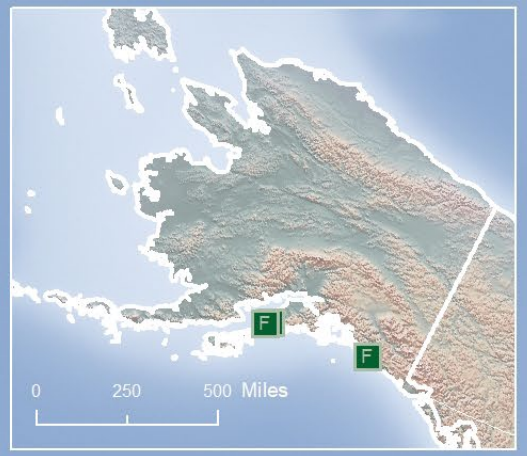
Climate Action Reserve

- Mission: to develop, promote and support innovative, credible market-based climate change solutions that benefit economies, ecosystems and society
- Develop high-quality, stakeholder-driven, standardized carbon offset project protocols across North America and Latin America
- Accredited Offset Project Registry under the California cap-and-trade program
- Serve compliance and voluntary carbon markets
- Reputation for integrity and experience in providing best-in-class registry services for offset markets

The Climate Action Reserve

Ensure that the carbon market generates environmental benefits while maintaining financial integrity and value

- Develop North American and LATAM GHG removal standards and quantification and verification guidelines.
- Emit carbon credits generated by Projects, known as Climate Reserve Tonnes (CRTs).
- Monitor and record the transfer and withdrawal of credits in a transparent and publicly accessible system
- Develop practical and useful accounting tools and training to facilitate project development.



CLIMATE ACTION RESERVE

- Adipic Acid
- Forest
- Forest (ARB)
- Grassland
- Landfill
- Livestock
- Livestock (ARB)
- Mine Methane
- Mine Methane (ARB)
- Nitric Acid Production
- Nitrogen Management
- Organic Waste Composting
- Organic Waste Digestion
- Ozone Depleting Substances
- Ozone Depleting Substances (ARB)
- Soil Enrichment

Listed, Registered, Transitioned, & Completed Projects as of January 19, 2023

Climate Action Reserve

Voluntary & compliance

>550 Projects

185M+ Credits Issued

LATIN AMERICA

Mexico – Livestock, Landfill, Forest

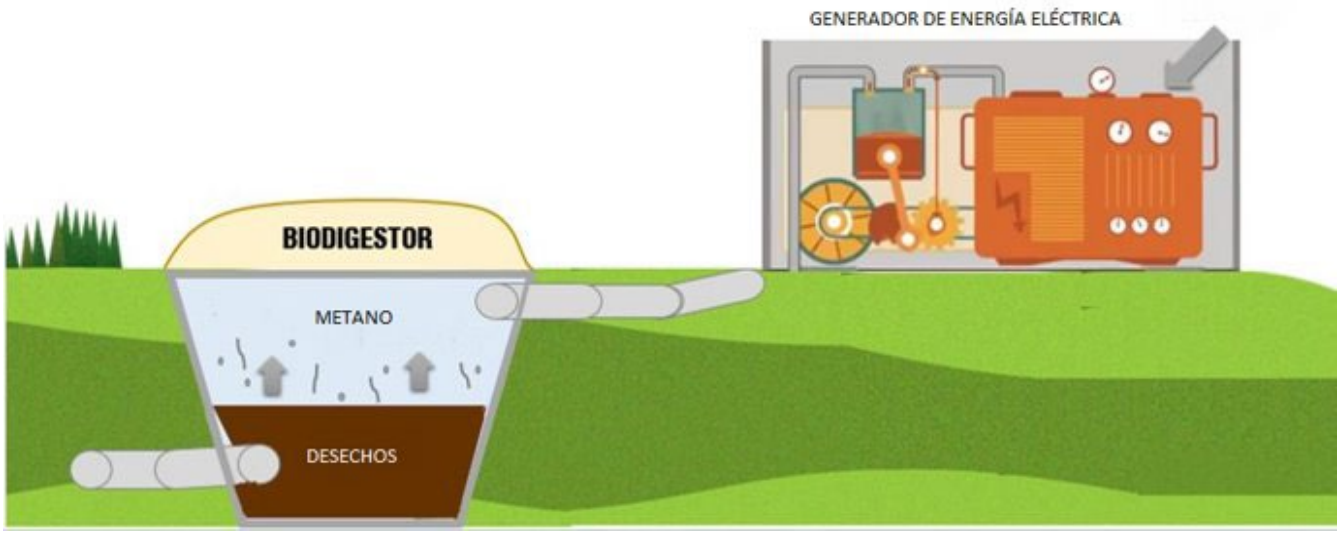
Panama – Forest

Dominican Republic – Livestock

What is an Offset Credit Project?

An offset credit project is an activity or set of activities that:

- Reduce GHG emissions,
- Increase the sequestration or storage of carbon removed from the atmosphere.



Principles of the Reserve Program

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All registered projects and credits issued by the Reserve must be:

ADDITIONAL	VERIFIED	REAL	PERMANENT	ENFORCEABLE
• Beyond common practices • Beyond regulatory requirements	• Standardized eligibility criteria and quantification methodologies • Independent third-party review.	• Conservative emissions accounting • Prescriptive models and equations • Uncertainty reduction	• Monitoring and reporting processes • Any leakage or loss is quantified and compensated	• Processes to ensure program compliance • Accountability mechanisms

- The Reserve seeks to be practical and ensures that projects do not have negative impacts
- The standards include social and environmental safeguards to ensure the participation and benefit of the participants

GHG Accounting Standardization

Two elements:

- Determination of project eligibility and additionality using standardized criteria rather than project-specific assessments.
- Quantification of GHG reductions/removals through a baseline established under certain assumptions, emission factors and monitoring methods.

Objetives:

- Minimize personal judgment in project assessment
- Reduce transaction costs for the project developer, minimize uncertainties for investors, and increase the transparency of the project when it is approved and verified

Rigorous, Inclusive and Transparent Process for the the Protocol Development

Form the work group → Draft a protocol with the working group → Public Comment Period → Protocol adoption by the Board of Directors

Inclusive Process: A balanced multi-stakeholder working group is formed with industry and jurisdiction experts, state and federal agencies, environmental organizations and other stakeholders.

- Stakeholders that are not part of the working group can still participate in the process as “observers”.

Transparent Process: All working group meetings and webinars for the public comment period are recorded and posted on the website along with the drafts

Background: Why Livestock in the Dominican Republic

- Manure treated and stored under anaerobic conditions (e.g., lagoons, ponds, tanks, pits) decompose to produce methane, a global warming potential 28 times that of CO_2
- In 2015, the surface land area dedicated to livestock in the Dominican Republic amounted to 1,400,000 ha, representing approximately 29% of the country's territory.
- 1.8 million pig population and 3.05 million cattle population as of 2020.
- Only 27 biogas control systems, none of which are registered carbon offset projects
  - Primarily swine farms

PROTOCOL DEVELOPMENT PROCESS & TIMELINE

Protocol Development Timeline

1. Kick-off meeting
2. Work-group formation
3. Draft development
4. Work-group process
5. Public comment (30-day)
6. Board adoption

6 months

Stakeholder Engagement & Workgroup

- Stakeholder participation & feedback is critical to protocol development
- Stakeholder Engagement form helps the Reserve identify & communicate with interested stakeholders throughout the protocol development process
- An interested and experienced sub-group of stakeholders are identified to construct a **technical workgroup** to advise protocol development and produce rigorous, well-vetted, and credible protocols
- The Reserve strives to construct a workgroup with a balanced representation from industry, project developers, farmers, environmental NGOs, verification bodies, independent consultants, academia, and government bodies
- Interested stakeholders invited to submit one of two forms:
  - Observer: Please submit the **Stakeholder Engagement Form** at any time
  - Technical workgroup: Please submit the **Statement of Interest Form** by **February 3, 2023**

Workgroup Process and Expectations for Workgroup members

Process

- Reserve staff identify and solicit feedback on specific protocol criteria
- Reserve staff schedule and hold meetings in Spanish (likely 1-2)
- Reserve staff produce draft protocol for review
- Reserve staff revise protocol based on feedback

Expectations

- Participation of local stakeholders in the Dominican Republic
- Familiarity with the feedstocks, technologies, and/or end uses for which the protocol is being developed (livestock sector), and/or solid understanding of project-based GHG accounting
- Review, comment on and provide recommendations on specific protocol criteria
- Participate in meetings via webinar
- Provide written comments on draft protocol

Statement of Interest and Local Engagement

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Statement of Interest – Workgroup

- Form for interested parties wishing to join the workgroup
- Selected members will commit to: Participate in meetings, provide comments, review protocol, actively participate during workgroup meetings
- Only 15-30 participants will be selected
- An email will be sent out to selected candidates
- Persons not selected in the workgroup may be included as “observers”
- **Deadline: February 3, 2023**
- **Form found here**

Local Engagement

- Participate as an observer during the development of the protocol
- Observers will receive invitations to the workgroup meeting, but participation is limited to silent mode with the opportunity to send comments via chat
- Can submit comments during the public comment period
- **Deadline: ongoing**
- **Form found here**

KEY CONSIDERATIONS FOR PROTOCOL DEVELOPMENT

Adapting the Livestock Protocol to the Dominican Republic Context

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- Use the Mexico Livestock Protocol as a base
  - Facilitate protocol development
  - Comprehensive protocol with over 10 years since its publication
  - Mexican livestock sector is similar to Dominican Republic
  - Worked with MexiCO2 to facilitate the financing of the initial adaptation

- The main changes will include:
  - Evaluate Dominican Republic laws, regulations, and common practice
  - Evaluate need for new safeguards
  - Review with Dominican Republic stakeholders

Key considerations for protocol development

- Project definition
- Project ownership
- Additionality
- Quantification
- Monitoring
- Reporting & Verification
- Calculation Tool

Project Definition

- Installation of a biogas control system (or “digester”) that captures and destroys methane gas from anaerobic manure treatment and/or storage facilities on livestock operations
  - Dairy cattle and swine operations
- Captured biogas must be destroyed, either through:
  - on-site destruction device (e.g., flare, engine)
  - transported for off-site use (e.g., gas distribution or transmission pipeline), or
  - used to power vehicles
- Allows for centralized digesters that integrate waste from multiple livestock operations
- Greenfield Livestock operations: projects that are implemented at new livestock facilities that have no prior manure management system

Project Ownership

- Project developer is an entity with an active account on the Reserve and is responsible for all project monitoring and verification. Project developers can be:
  - Livestock facility owners and operators
  - GHG Project financiers,
  - Or other entities
- Must have clear ownership of the reductions and established through explicit title and must sign the Attestation of Title
  - May be contracts in place between facility owner and project financiers

Eligibility Rules

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- Eligibility Rule I: Location
- Eligibility Rule II: Project Start Date
- Eligibility Rule III: Project Crediting Period
- Eligibility Rule IV: Anaerobic Baseline
- Eligibility Rule V: Additionality
- Eligibility Rule VI: Regulatory Compliance

Location

- Dominican Republic only

Agricultural regions of the DR Source: Tetra Tech, 2011

Project Start Date

- Start date is defined as the date the project's BCS becomes operational
- BCS is operational on the date at which the system begins producing and destroying methane gas upon completion of an initial start-up period
- Projects must be submitted to the Reserve within 12 months after the project start date

Project Crediting Period

- Crediting period is defined as 10 years following the project's start date
- Eligible up until a regulatory body legally requires the livestock operation to install a BCS
- May apply for a second crediting period
  - Project lifespan: 2, 10-year crediting periods for 20 years total
  - Must apply within 6 months of the end of the final reporting period
  - Must meet the requirements of the newest version of the protocol

Anaerobic Baseline

- Must demonstrate depth of lagoons pre-project are 1 meter in depth
  - Sufficient to prevent algal oxygen production and create oxygen-free bottom layer
- Designed and maintained with sufficient volume to properly treat volatile solids and prevent solids from accumulating
- Greenfield projects must demonstrate that uncontrolled anaerobic storage and/or treatment of manure is common practice in the industry and geographic region where the project is located

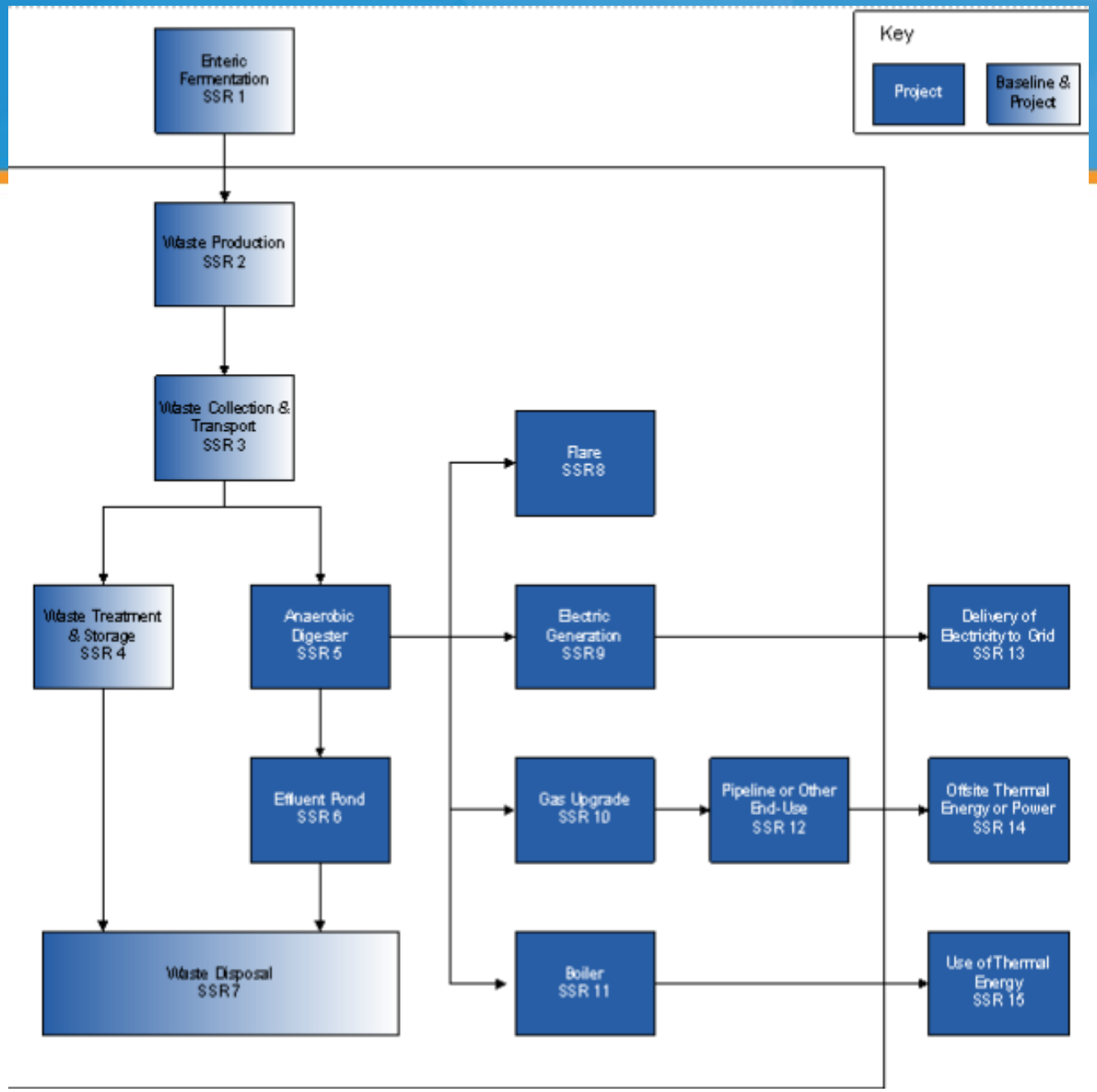
Additionality

- Must be above and beyond business-as-usual scenarios
- Must pass two additionality eligibility rules

1. Performance Standard Test
   - Standard of performance applicable to all manure management projects
   - Better than business-as-usual
   - Practice-based threshold, installing a BCS passes this test
2. Legal Requirements Test
   - Passes when there are no laws, statutes, regulations, court orders, environmental mitigation agreements, permitting conditions, or other legally binding mandates requiring project activities
   - No longer eligible on the date destruction becomes legally required

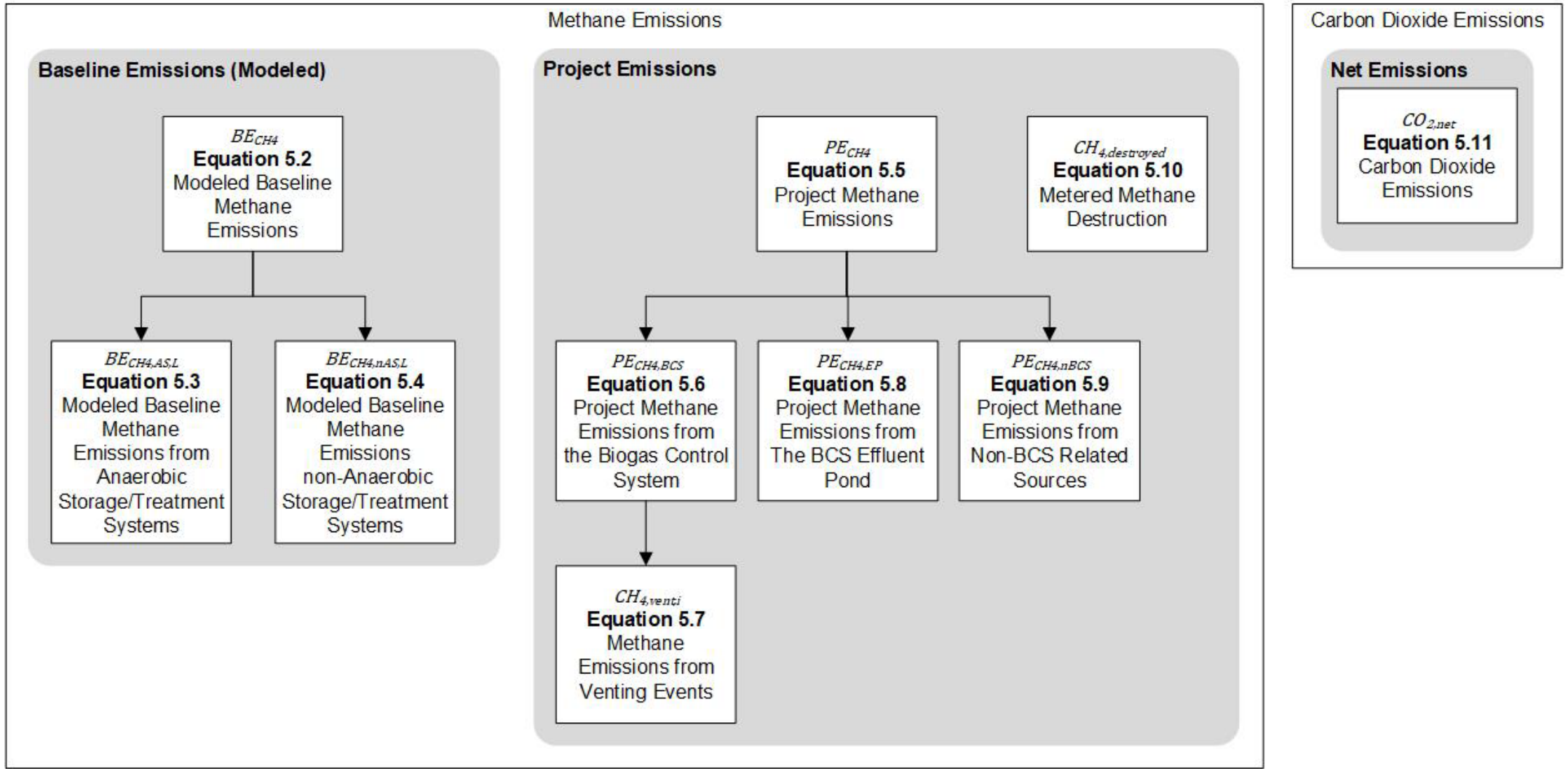
Regulatory Compliance

- Must attest that the project is in compliance with all laws applicable to the project activity
- Required to disclose any and all instances of legal violations – material or otherwise – caused by the project or project activities
  - “caused” by Project activities if it can be reasonably argued that a violation would not have occurred in the absense of the project activities
- If a violation is caused by project activities, credits will not be issued for the period of the violation
  - Administrative or violations due to “acts of nature” will not impact crediting
  - Re-occurring violations due to intent or negligence may impact crediting
- For projects with multiple discrete source facilities (from BCS Project in both location and management), it may be posible to demonstrate a violation occurring at one source facility does not impact the eligibility of the entire project


Key
Project
Baseline & Project
Enteric Fermentation SSR 1
Waste Production SSR 2
Waste Collection & Transport SSR 3
Waste Treatment & Storage SSR 4
Anaerobic Digester SSR 5
Effluent Pond SSR 6
Waste Disposal SSR 7
Flare SSR8
Electric Generation SSR9
Gas Upgrade SSR 10
Pipeline or Other End-Use SSR 12
Boiler SSR 11
Delivery of Electricity to Grid SSR 13
Offsite Thermal Energy or Power SSR 14
Use of Thermal Energy SSR 15

Equation 5.1 GHG Reductions from Installing a Biogas Control System

Total GHG Reductions= (Modeled baseline emissions$_{CH4}$ – Project emissions$_{CH4}$) + (Baseline emissions$_{CO2}$ – Project emissions$_{CO2}$)



Project Monitoring

- Must monitor:
  - Total flow of biogas prior to delivery to destruction device(s)
  - Flow of biogas delivered to each destruction device
  - Fraction of methane in the biogas
  - Operational status of the destruction device(s)
    - Or presence of safety shut off valve
- Flow data must be corrected for temperature (0°C) and pressure (1atm) either internally or calculated

Instrument QA/QC

- All gas flow meters and continuous analyzers must be:
  - Cleaned and inspected on a quarterly basis, with as found/as left condition documented
  - Field checked for calibration accuracy with percent drift documented at the end of but no more than 2 months prior to the end of the reporting period
  - Calibrated by the manufacturer or a certified calibration service per manufacture's guidance or every 5 years, whichever is more frequent

Reporting Period and Verification Cycle

- Reporting period is a period of time which the project developer quantifies and reports reductions to the reserve
  - Cannot exceed 12 months
- Verification period is a period of time over which reductions are verified
- Initial verification can only be one reporting period
- There are 3 verification cycle options:
  - 12-month maximum
  - 12-month maximum with desk audit
  - 24-month maximum

Calculation Tool

RDtool Version 1.0a

República Dominicana

CLIMATE ACTION RESERVE

Introducción a la Herramienta de Cálculo para Proyectos de Ganadería en México de la Reserva:

Se ha desarrollado esta herramienta de cálculo con el fin de ayudar con la cuantificación de las reducciones de emisiones en conformidad con la V2.0 de Mexico Livestock Project Protocol de la Reserva de Acción Climática. La herramienta está diseñada para ser la más "sencilla" como sea posible, aunque a primera vista, esta herramienta puede parecer muy complicada. Es importante señalar que sólo las hojas de trabajo que requieren la entrada del usuario son las hojas III, IV y V. El resto de las hojas de trabajo son para los cálculos automáticos, tablas y referencias y resúmenes de la ecuaciones. Todas las otras hojas de cálculo aparte de las III, IV y V no requieren intervención o manipulación del usuario. Con esto en mente, la disposición general se describe a continuación.

Hoja de Trabajo I. - Introducción e instrucciones.
Hoja de Trabajo II. - Resumen de Cálculos - En esta hoja se encuentra un resumen de la reducción de emisiones finales que serán reportadas a la Reseva.
Hoja de Trabajo III. - Datos de entrada para el Escenario de Línea Base - Esta hoja es para ingresar todos los datos para la línea base - (extraídos de los datos *In situ* y de tablas de consulta) necesarios para el cálculo de las emisiones de línea base.
Hoja de Trabajo IV. - Datos de entrada para el Escenario del Proyecto - Esta hoja es para ingresar todos los datos del proyecto (extraídos de datos *In situ* y tablas de consulta) necesarios para el cálculo de las emisiones del proyecto.
Hoja de Trabajo V. - Emisiones de la Línea Base de Metano de los Sistemas de Almacenamiento/Tratamiento Anaeróbicos - Esta hoja se encuentra en su mayor parte automatizada, sin embargo **el Usuario es responsable de la ingresar manuelmente los datos de entrada de los datos de cálculo de los años previos.**
Hoja de Trabajo VI. - Emisiones de la Línea Base de Metano de los Sistemas de Almacenamiento/ Tratamiento No-Anaeróbicos - El Usuario no requiere ajustar o ingresar nuevos datos.
Hoja de Trabajo VII. - Emisiones Totales de la Línea Base - Resumen del total de emisiones de línea base por categoría de ganado y sistema de almacenamiento/tratamiento. El Usuario no requiere ajustar o ingresar nuevos datos.
Hoja de Trabajo VIII. - Emisiones de Metano del Proyecto del Sistema de Control de Biogás - Automatizada, el Usuario no requiere ajustar o ingresar nuevos datos.
Hoja deTrabajo IX -Emisión de Metano por un Evento de Ventilación. Automatizada, el Usuario no requiere ajustar o ingresar nuevos datos.
Hoja de Trabajo X - Emisiones de Metano del Proyecto del Estanque Efluente del SCB - Automated, no user input/adjustment required. Automatizada, el Usuario no requiere ajustar o ingresar nuevos datos.

Hoja deTrabajo XI - Emisiones de Metano del Proyecto de Fuentes Relacionadas con Sistemas de Control que no sean de Control de Biogás. Automatizada, el Usuario no requiere ajustar o ingresar nuevos datos.

Hoja de Trabajo XII. - Total de Emisiones de Metano del Proyecto - Resumen del total de emisiones de metano del proyecto. Automatizada, el Usuario no requiere ajustar o ingresar nuevos datos.
Hoja de Trabajo XIII. - Cálculos de Emisiones de Dioxido de Carbono - Automated, no user input/adjustment required. Automatizada, el Usuario no requiere ajustar o ingresar nuevos datos.

Descripción de datos de entrada:

A continuación encontrará una descripción de los insumos requeridos mensuales (todos los demás insumos son sobre una base anual):

Sobre una base mensual, los desarrolladores del proyecto tiene que introducir en esta herramienta de cálculo las siguientes variables:

1) Actualizar la población por tipo de ganado – Hoja de Cálculo III, Sección III.D
2) Actualizar la cantidad medida de metano capturado y quemado por el sistema de recolección de biogás – Hoja de Trabajo IV, Sección A.

Otras variables y parámetros se ingresan dentro de esta herramienta de cálculo sólo una vez al año, y algunos sólo una vez al inicio del proyecto.

Este libro de trabajo calcula automáticamente las emisiones de metano utilizando los datos mensuales ingresados por los desarrolladores de proyectos y los valores tomados del protocolo.

Para mayor conveniencia de uso, las celdas dentro de las hojas de trabajo son definidas de tal manera que:

- campos que se requieren para ser llenados por el usuario utilizando los datos específicos del sitio se destacan en Amarillo.
- campos que requieren ser llenados con la información obtenida de las tablas de consulta de la Hoja XIV se destacan en Naranja.
- campos que se calculan automáticamente **pero que deben ser registrados y utilizados como insumo para el cálculo del próximo año se destacan en Durazno.**
- campos que se completan de forma automática a partir de datos extraídos de la información proporcionada previamente por el usuario se destacan en Verde.
- valores constantes se proporcionan en los campos Grises.
- campos que se calculan automáticamente basados en los valores específicos del lugar y por defecto se resaltan en Azul.
- campos que muestran los resultados de los cálculos finales se destacan en Rosa.
- los campos que muestran alertas y notas para el Usuario se destacan en Rojo.
- campos disponibles para las notas y los comentarios del Usuario se destacan en color Amarillo pálido

Protocol development process & timeline

Milestone	Date
Public kick-off meeting	January 26, 2023
Statements of Interest Form (Workgroup)	**February 3, 2023**
Formation of workgroup	February 2023
Tentative date for first workgroup meeting	February 21, 2023
Staff drafts protocol	January – February 2023
Workgroup meetings and review	February 2023
Public comment period	March-April 2023
Protocol presented to Reserve Board for approval	June 2023

NEXT STEPS

Next steps

- ***For interested stakeholders:***
  - Submit Stakeholder Engagement Form
  - **Submit a Statement of Interest to become a workgroup member (by February 3, 2023)**
  - Email interest to sign up for updates as an observer
  - Email us feedback anytime
- ***For Reserve:***
  - Form workgroup
  - Finalize draft protocol
  - First Workgroup meeting mid-end February (via webinar)

Key contacts

- ***Climate Action Reserve:***

  Protocol development lead:

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THANK YOU!