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Public Comment Webinar: Dominican Republic Livestock Protocol V1.0

September 1st, 2023

Reserve Staff



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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:
 - Submit comments by **September 6**
- Key sections of the Dominican Republic Livestock Protocol
 - Project definition
 - Project ownership
 - Additionality
 - Permanence
 - Quantification
 - Monitoring / reporting / verification
- Next steps



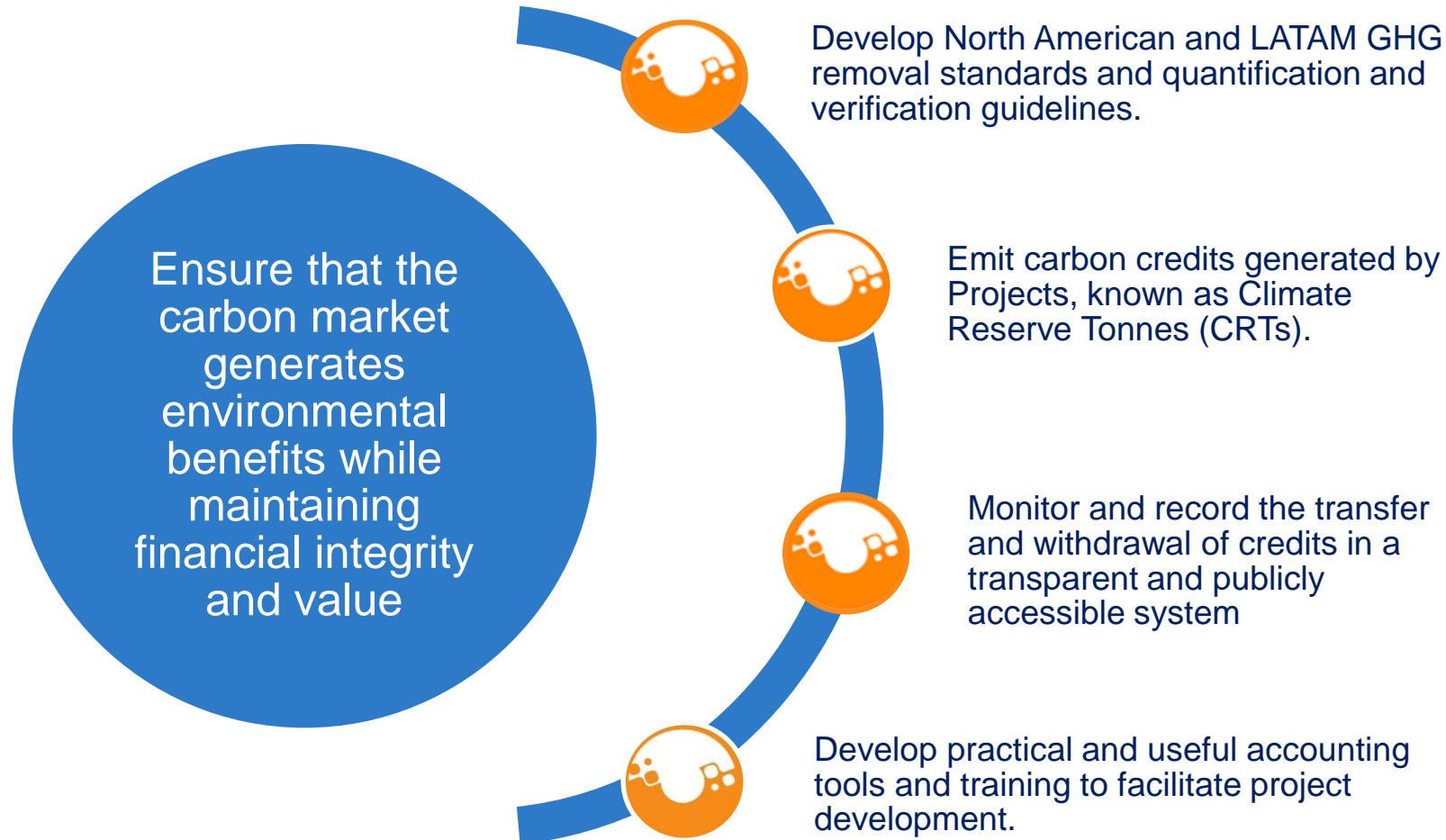
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Climate Action Reserve



- 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, Latin America, and China
- Accredited Offset Project Registry under the California cap-and-trade program, Washington cap-and-invest program, and CORSIA
- 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

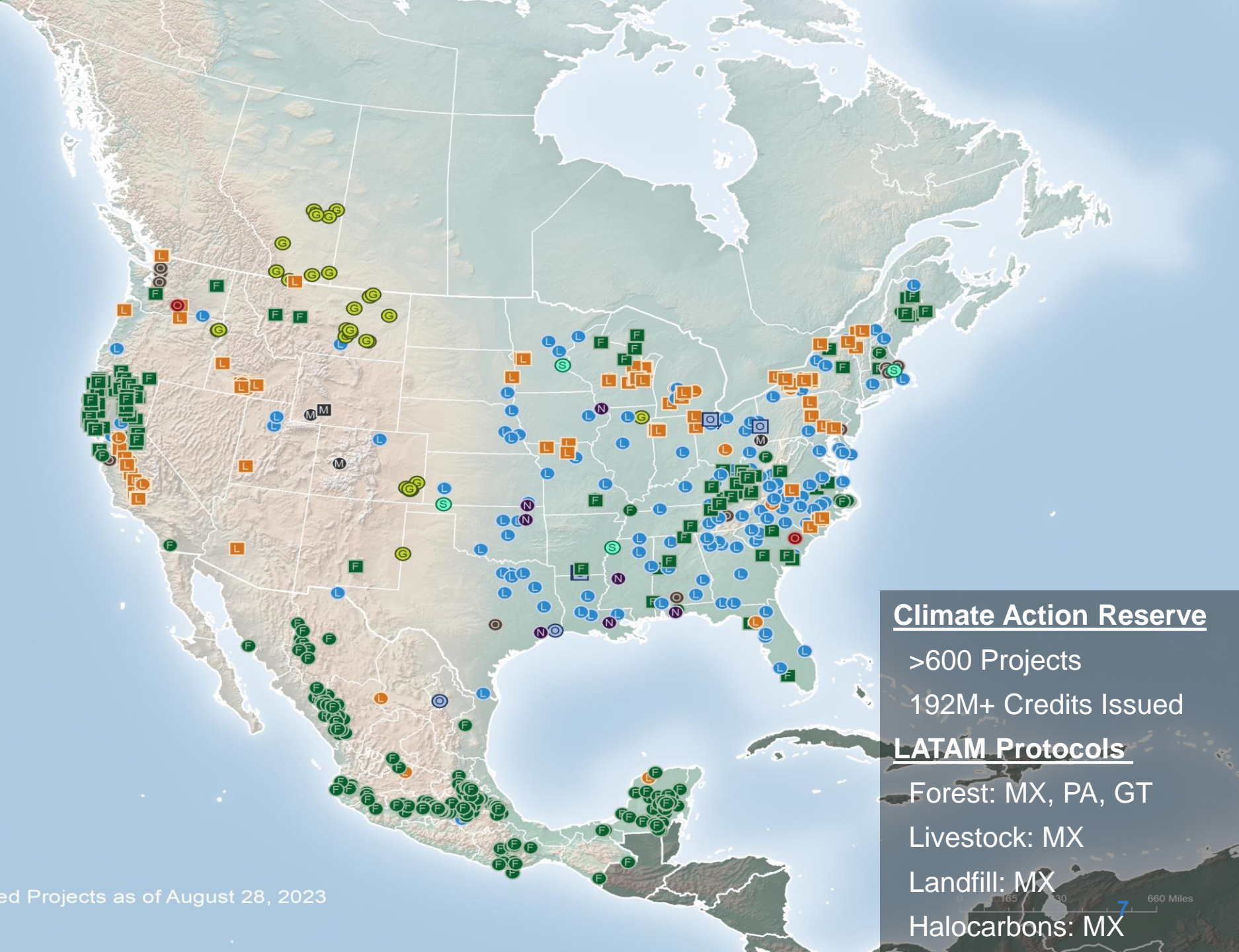




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- A Adipic Acid
- F Forest
- F Forest (ARB)
- G Grassland
- L Landfill
- L Livestock
- L Livestock (ARB)
- M Mine Methane
- M Mine Methane (ARB)
- N Nitric Acid Production
- N Nitrogen Management
- O Organic Waste Composting
- O Organic Waste Digestion
- O Ozone Depleting Substances
- O Ozone Depleting Substances (ARB)
- S Soil Enrichment

978 Listed, New, Registered & Completed Projects as of August 28, 2023



Climate Action Reserve

>600 Projects

192M+ Credits Issued

LATAM Protocols

Forest: MX, PA, GT

Livestock: MX

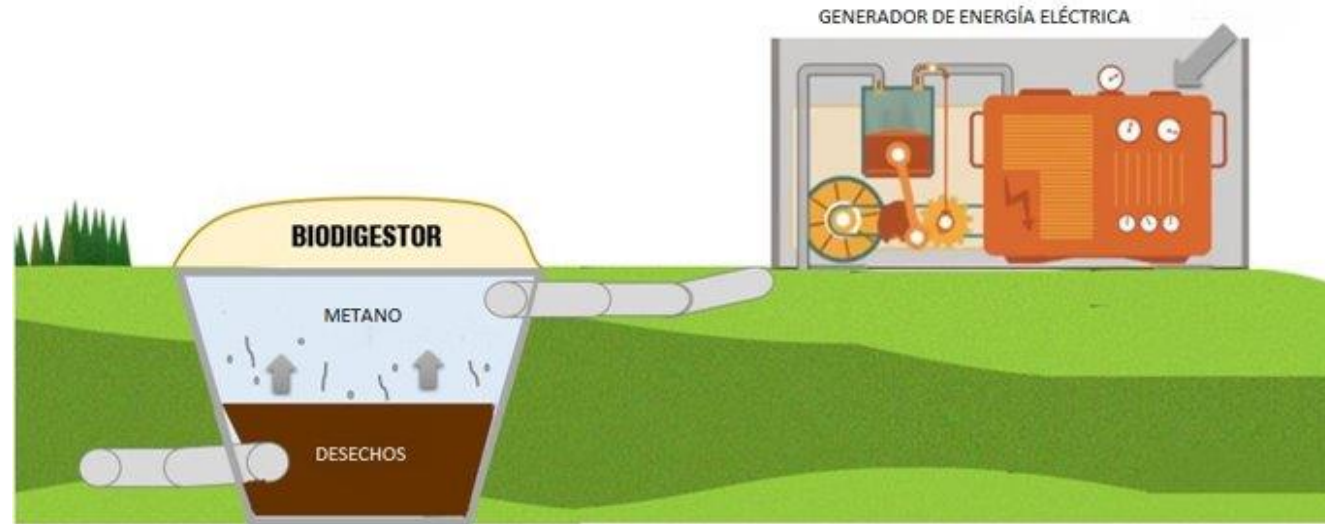
Landfill: MX

Halocarbons: MX

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

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

ADDITIONAL	VERIFIED	REAL	PERMANENT	ENFORCEABLE
<ul style="list-style-type: none">• Beyond common practices• Beyond regulatory requirements	<ul style="list-style-type: none">• Standardized eligibility criteria and quantification methodologies• Independent third-party review.	<ul style="list-style-type: none">• Conservative emissions accounting• Prescriptive models and equations• Uncertainty reduction	<ul style="list-style-type: none">• Monitoring and reporting processes• Any leakage or loss is quantified and compensated	<ul style="list-style-type: none">• 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

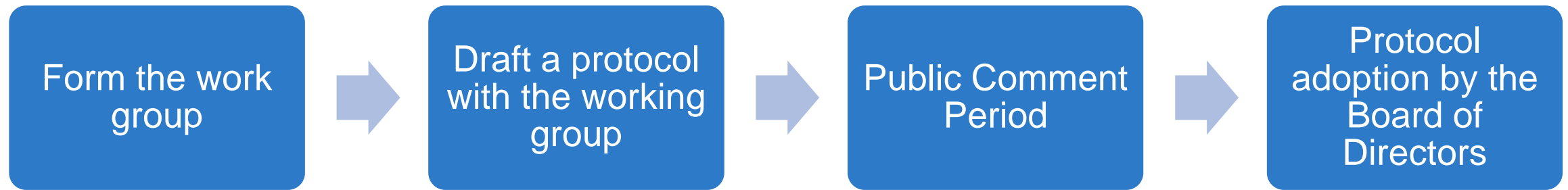
Two elements:

- 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.

Objectives:

- 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



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

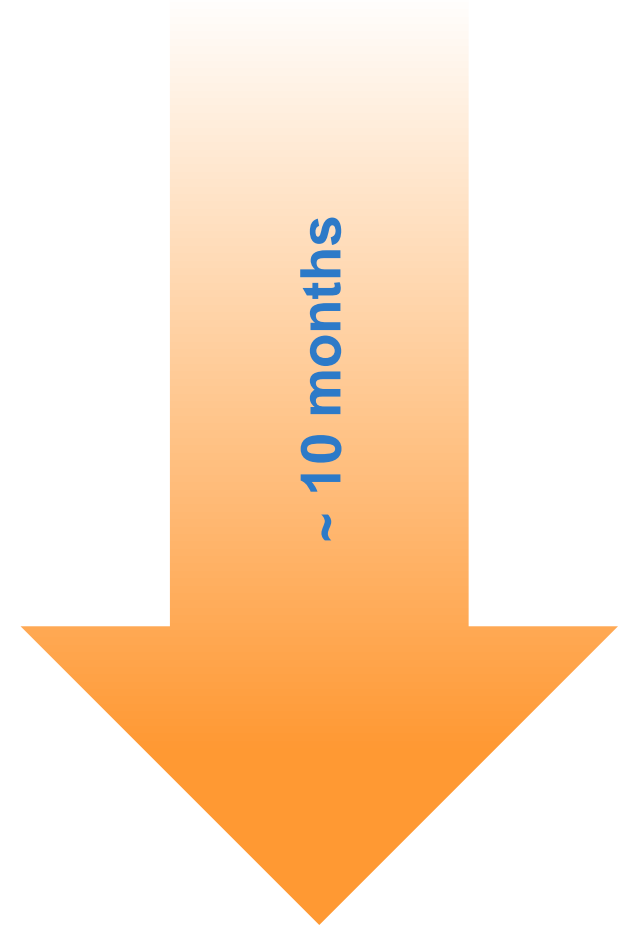


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PROTOCOL DEVELOPMENT PROCESS & TIMELINE

Protocol Development Timeline

1. Kick-off meeting (*January 26, 2023*)
2. Workgroup process (*February – May 2023*)
 - Meeting 1 (*February 21, 2023*)
 - Meeting 2 (*March 9, 2023*)
 - Meeting 3 (*April 13, 2023*)
3. Revisions based on workgroup feedback (*February – July 2023*)
4. 30-day public comment period (*August 7 – September 6, 2023*)
5. Revisions based on public comments (*September 2023*)
6. Propose to Board adoption (*October 2023*)





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KEY CONSIDERATIONS FOR PROTOCOL DEVELOPMENT

Adapting the Livestock Protocol to the Dominican Republic Context

- 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 are indicated in red, which include:
 - Incorporating Dominican Republic laws, regulations, and common practice
 - Incorporating need for new social and environmental safeguards
 - Expanding eligibility to include beef cattle and chickens and flexibility for inactive farms to come online
 - Allowing for site-specific maximum methane potential ($B_{0,L}$) for dairy cattle
 - Incorporating flexibility in monitoring requirements

Assessment of Common Practice

Swine

- Predominant waste management systems used by the Swine Cooperative of the Cibao Region was anaerobic lagoons (62%)

Beef and Dairy Cattle

- Open lagoons or concrete tanks for dairy cattle
- Expert technical workgroup reported anaerobic digestion is common practice for beef

Poultry

- Few studies on DR, but expert technical workgroup reported anaerobic digestion is common practice, supported by studies globally

Biodigester Use

- Lack of incentives for installing biodigesters beyond carbon credits
- Identified 27 digesters, primarily located at swine farms

Key sections of the protocol

- Project definition
- Project ownership
- Additionality
- Quantification
- Monitoring
- Reporting & Verification
- Calculation Tool (in development)

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, beef cattle, chickens, 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

Eligibility Analysis for Chickens

- Anaerobic Baseline Requirements
 - Lack of published studies on waste management systems present for chickens
 - Workgroup reported that they are typically managed in open lagoons
 - PDs must present evidence that it meets baseline requirements
- Quantification
 - 2 of the 3 methodologies that the protocol relies on supports this approach.
 1. CDM – includes cattle, buffalo, swine, sheep, goats, and poultry
 2. EPA Clean Leaders Program – includes broilers and layer chickens
 3. RGGI Model Rule – N₂O is not eligible for crediting
 - Exclusion of N₂O is still applicable
 1. Emissions will either remain the same or decrease from the baseline scenario
 2. Uncertainty within calculating N₂O due to complexity of nitrification-denitrification cycle

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

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



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
- Projects that have been inactive should contact the Reserve

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

Legal Requirements Test

- Workgroup identified Law No 225-20 Article 125: Treatment of Organic Waste states that the treatment of waste of animal origin may be carried out using biodigesters where the biogas is then burned.
- The workgroup found that while the law encourages the use biodigesters and biogas destruction, it has not been implemented as a legal mandate nor does it provide economic incentives to install biodigesters or the destruction of biogas.

Regulatory Compliance

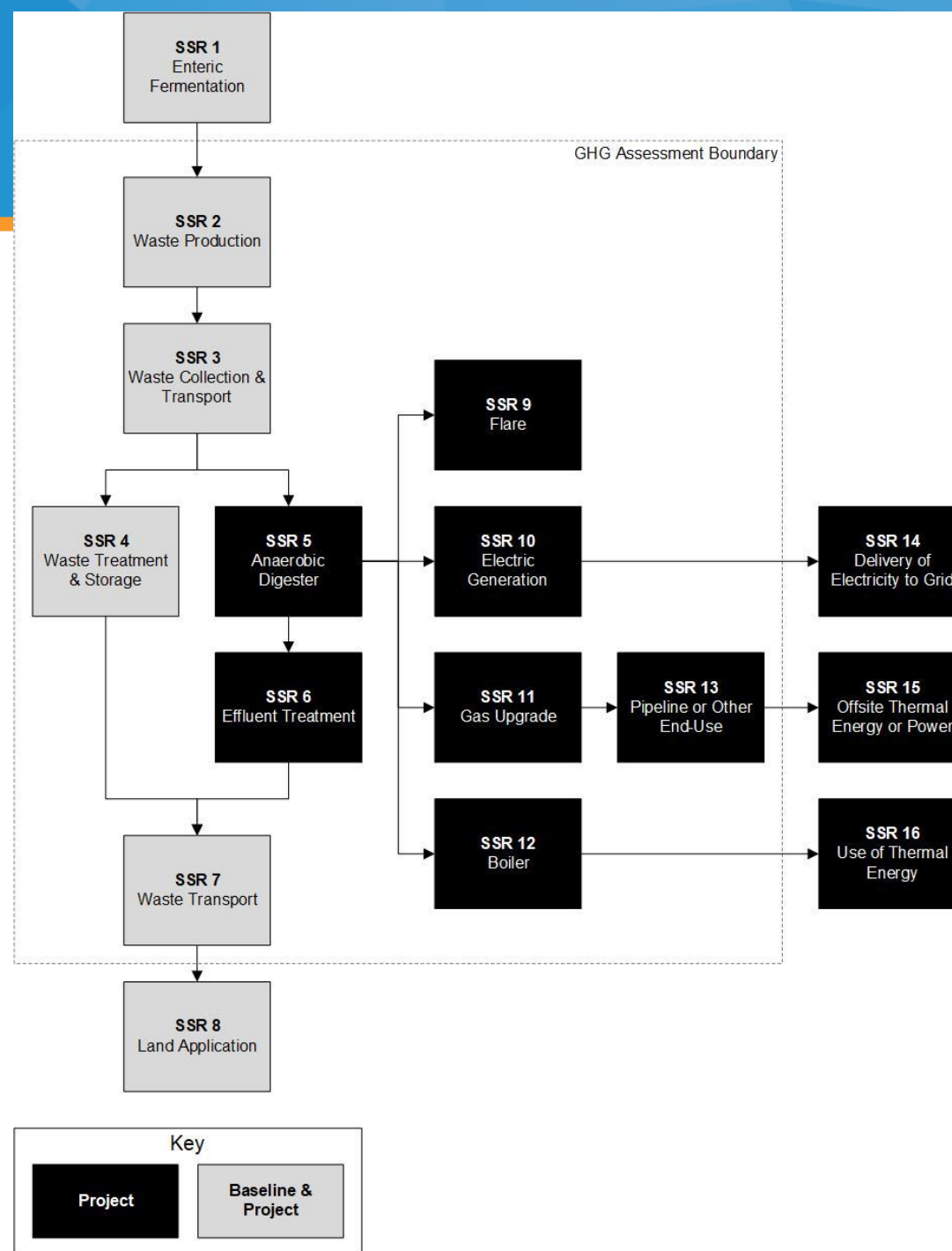
- Must attest that the project is in compliance with all laws applicable to the project activity
- Required to disclose any and all instances of legal violations – material or otherwise – caused by the project or project activities
 - “caused” by Project activities if it can be reasonably argued that a violation would not have occurred in the absence 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 possible to demonstrate a violation occurring at one source facility does not impact the eligibility of the entire project

Social Safeguards

- Free, Prior, and Informed Consent (FPIC)
 1. Address several topics with the livestock operator prior to approval
 2. Livestock operator must approve the project prior to listing
- Ongoing requirements:
 1. Review project activities and MRV annually
 2. Credits issued
 3. Finances and ongoing benefit sharing
 4. Must be presented in an appropriate format and language to ensure understanding
- Be in compliance with all labor and safety laws
- Livestock operator/project developer have uncontested land title for the entire project boundary
 - Includes a public comment and dispute resolution process.

Environmental Safeguards

- In compliance with air and water quality regulations
- Designed and implemented to mitigate pollutants
- In compliance with laws related to animal welfare

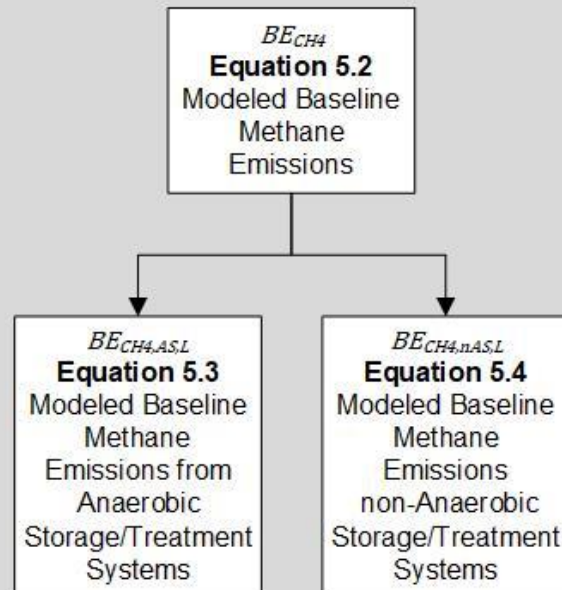


Equation 5.1 GHG Reductions from Installing a Biogas Control System

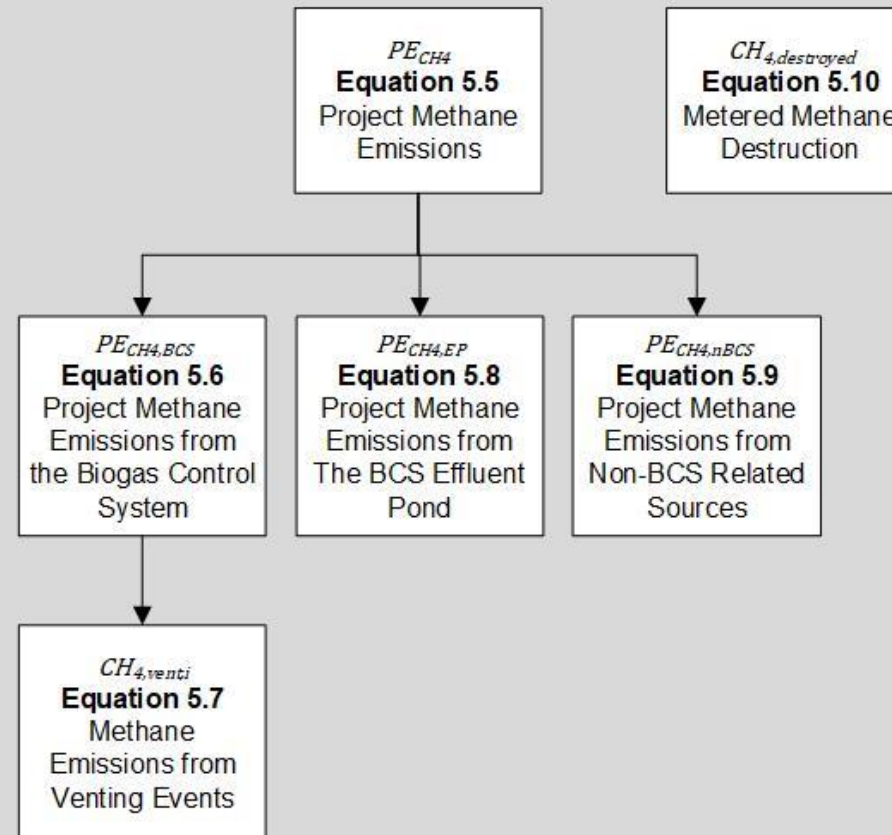
$$\text{Total GHG Reductions} = (\text{Modeled baseline emissions}_{CH_4} - \text{Project emissions}_{CH_4}) + (\text{Baseline emissions}_{CO_2} - \text{Project emissions}_{CO_2})$$

Methane Emissions

Baseline Emissions (Modeled)



Project Emissions



Carbon Dioxide Emissions

Net Emissions

$$CO_{2,net}$$

Equation 5.11
Carbon Dioxide
Emissions

Site-Specific Determination of Maximum Methane Potential

- First developed under the U.S. Livestock Protocol
- Optional for dairy facilities. Swine, beef cattle, and chicken facilities must use default
- Criteria includes:
 - Sampling Schedule - taken during the months where milk production is average- or below-average
 - Sampling Sources
 - Laboratory Analysis - 3rd party laboratory following Biochemical Methane Potential (BMP) Assay procedure
- No laboratories within the Dominican Republic have the necessary years of experience with BMP procedures
 - Can use labs in other jurisdictions
 - Will support labs to meet the requirements

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 (1 atm) 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 when manufacturer's guidance is not provided

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

Supplemental Documentation

- The Reserve will provide supplemental documentation for project developers
 1. Calculation Tool
 2. Monitoring Report
- Both documents will be required to be submitted to the verifier and Reserve during each verification
- The project developer may develop their own versions or use the one developed by the Reserve

Protocol development process & timeline

Milestone	Date
Public kick-off meeting	January 26, 2023
Statements of Interest Form (Workgroup)	February 3, 2023
Workgroup meetings and review	February – May 2023
Public comment period	August 7 – September 6, 2023
Revisions based on public comment	September 2023
Protocol presented to Reserve Board for approval	October 2023



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NEXT STEPS

Next steps

- ***For interested stakeholders:***
 - Submit comments (Spanish or English) by September 6, 2023 to cjurado@climateactionreserve.org
- ***For the Reserve:***
 - Review and respond to comments
 - Finalize protocol based on comments
 - Publish the protocol being presented to the board
 - Present the final protocol to the board for adoption (October 2023)

Key contacts

- ***Climate Action Reserve:***

Protocol development lead:

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THANK YOU!