CLIMATE ACTION RESERVE

Landfill Protocol & Chile and Argentia Jurisdiction Modules

Public Comment Webinar

October 14, 2026

Introductions

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 webinar

The slides and a recording of the presentation will be posted online on the protocol webpage: https://climateactionreserve.org/how/protocols/waste/landfill/dev/

AGENDA

- Climate Action Reserve
- Overview of the new Modular approach
- Landfill Protocol Key Considerations
- Chile & Argentina Jurisdiction Modules Key Considerations
- Q&A
- Next steps
  - Submit comments by **October 23, 2026**

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INTRODUCTION TO THE CLIMATE ACTION RESERVE

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HIGH-INTEGRITY CREDITS FOR GLOBAL CARBON MARKETS

CORSIA

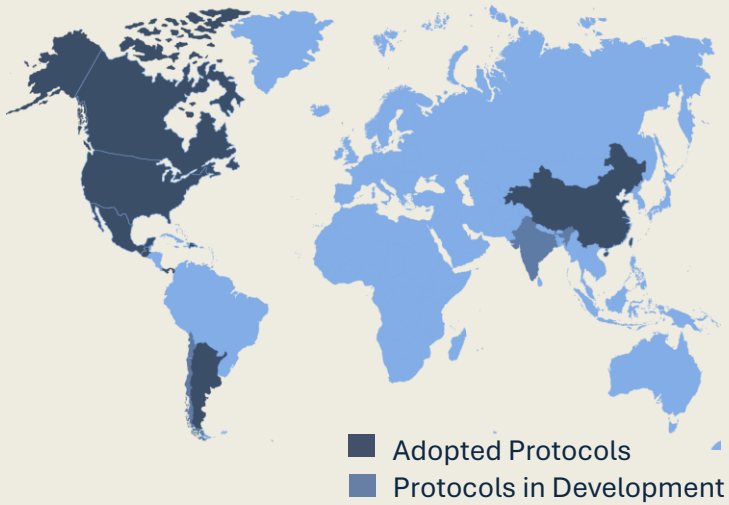
Phase I approval for all methodologies - 3.1M eligible credits.

ICVCM CCP CORE CARBON PRINCIPLES

8 PROTOCOLS CCP-APPROVED

38 m CREDITS CCP-ELIGIBLE

Represents 31% of all CCP labeled credits in the carbon market.



31 PROTOCOLS

260+M CREDITS

1.19k PROJECTS

Nature-Based Solutions

Waste and Methane Destruction

Industrial Processes and Gases

The Climate Action Reserve

EXPERIENCE, INTEGRITY, INNOVATION

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Depth of Knowledge & Experience

- Roots in California's compliance program
- 25+ years in compliance and voluntary markets

48 days

World-leading project registration time

Average time from submittal to registration/issuance — a shorter, reliable turnaround for developers to monetize credits.

Pioneering Multi-Stakeholder Support

- Broad engagement with diverse stakeholder groups throughout protocol development and beyond

Trusted by Compliance Programs World-Wide

- US Cap-and-Invest: California & Washington
- Colorado Recovered Methane Rule
- Mexican state carbon taxes: Querétaro, Colima, Tamaulipas
- Chile Carbon Tax
- Singapore Carbon Tax (programmatic approval)
- CORSIA Phase I
- MOUs with governments worldwide

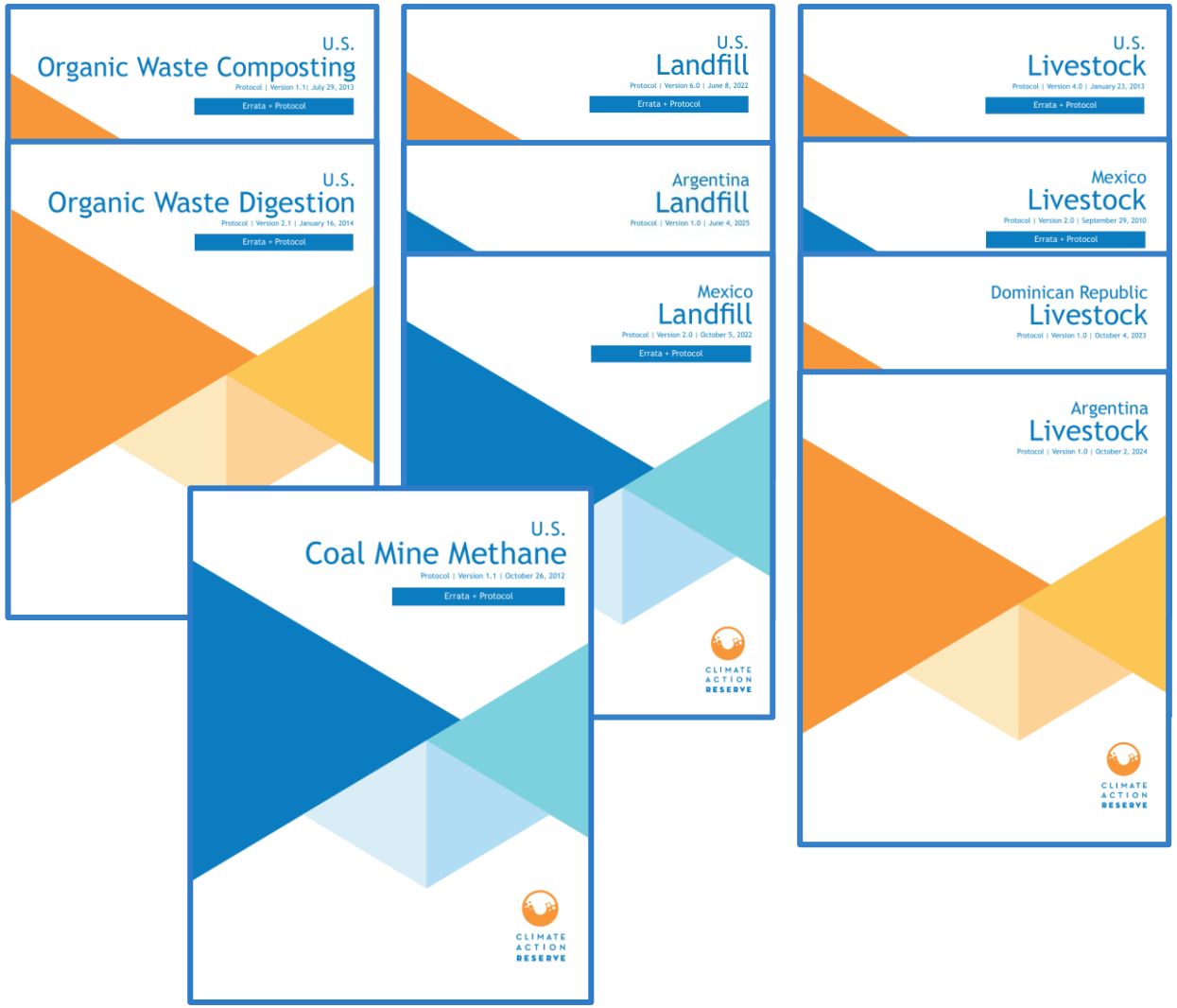
Standardized Protocols for Local Contexts

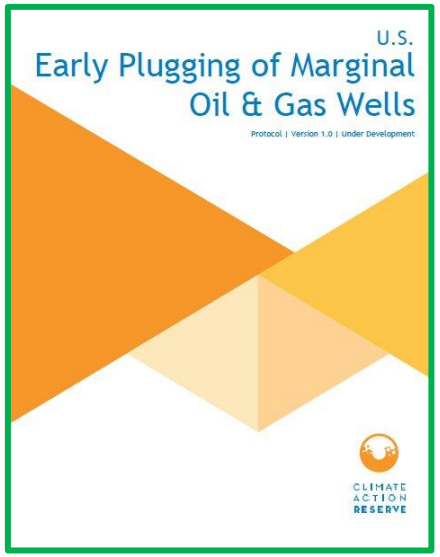
- Reduces project-specific subjective assessments; greater upfront certainty & downstream efficiencies
- Jurisdictional alignment with national climate priorities & legal frameworks reduces policy risk

High-Quality Credits You Can Trust

- Conservative accounting methodologies & baseline assumptions protect market confidence
- Robust verification body oversight
- Transparent registry and programmatic processes

Expertise in Methane





Key:
Existing protocols
Protocols open for comment

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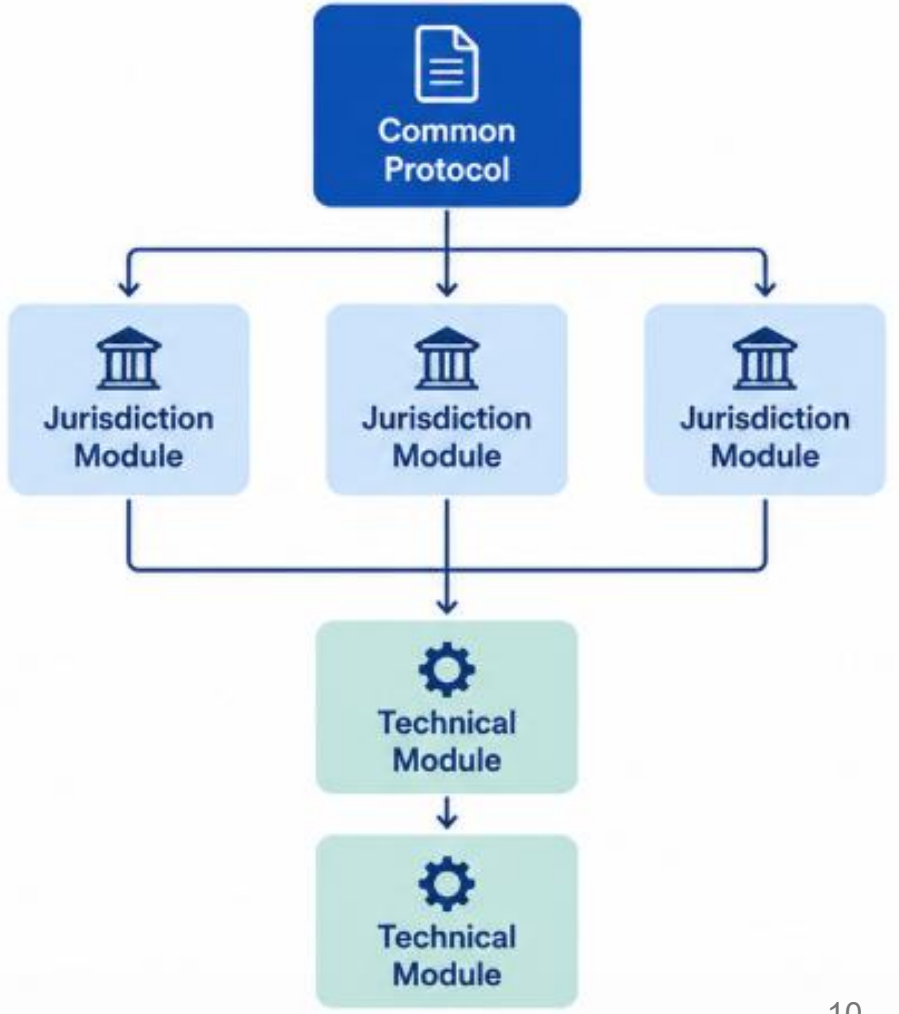
OVERVIEW OF THE NEW MODULAR APPROACH

Scaling Impact:
Modular Approach to Protocol Development

The Modular Protocol Structure includes 3 components:

1. Common Protocol
2. Jurisdiction Module
3. Technical Guidance Module

Primarily a restructure, reformatting of information, not a change in requirements



Scaling Impact: Modular Approach to Protocol Development

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How the Modular Approach Works

Consistent Core Requirements

Core quantification and eligibility criteria remain uniform across all jurisdictions to ensure integrity.

Adoption Within Months

Modularization enables the launch of protocols in new jurisdictions in just a few months.

Targeted Local Customization

Assessments focus exclusively on key local considerations rather than reinventing the entire protocol.

Strategic Value for Stakeholders

Reduced Operational Costs

Lower transaction costs for developers operating across multiple countries in the region.

Faster Market Readiness

Accelerates the availability of high-integrity credits for governments and regional buyers.

Scalable Regional Growth

Enables rapid expansion into emerging jurisdictions without compromising environmental integrity.

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LANDFILL PROTOCOL KEY CONSIDERATIONS

Landfill Protocol

- The Reserve developed the Landfill Protocol Version 1.0 based on the US Landfill Protocol Version 6.0.
- The Protocol was expanded to include the issuance of CRTs resulting from the displacement of fossil fuels through the generation energy from landfill gas in jurisdictions where energy is not regulated

Key considerations for protocol development

- Project definition
- Eligibility Rules
- The GHG Boundary
- Quantifying GHG Emission Reductions
- Monitoring Requirements
- Verification Guidance
- Appendixes

Project Definition

- LFG-to-energy projects:
  Emissions reductions from the displacement of fossil fuels, natural gas or other GHG-intensive sources of energy were added in the Project definition.

Eligibility rules

Performance Standard Test

- Carbon revenues as a material consideration: Project Developers must provide dated, verifiable evidence showing that anticipated carbon revenues influenced the investment decision and project viability before the Project Start Date.
- Periodic additionality reassessment: The Performance Standard Test (PST) will be regularly reviewed and updated, with projects reassessed against the latest version at each verification to ensure continued additionality.
- LFG-to-energy projects: Additionality must be demonstrated according to the relevant Jurisdictional Module requirements

Limits on Credit Stacking

- This section was adapted considering the LFG-to-energy activity.

Eligibility rules

Regulatory Compliance

- This section was updated considering that guidance related to regulatory compliance specific to a jurisdiction would be found in the relevant Jurisdiction Module.

Safeguards

- To ensure no social and environmental adverse impacts result from the project activities a new eligibility rule was added to include Social & Environmental Safeguards.

Social Safeguards included:

- Free, Prior, and Informed Consent (FPIC)
- Ongoing Notification, Participation, and Documentation
- Labor and Safety
- Dispute Resolution

Environmental Safeguards included:

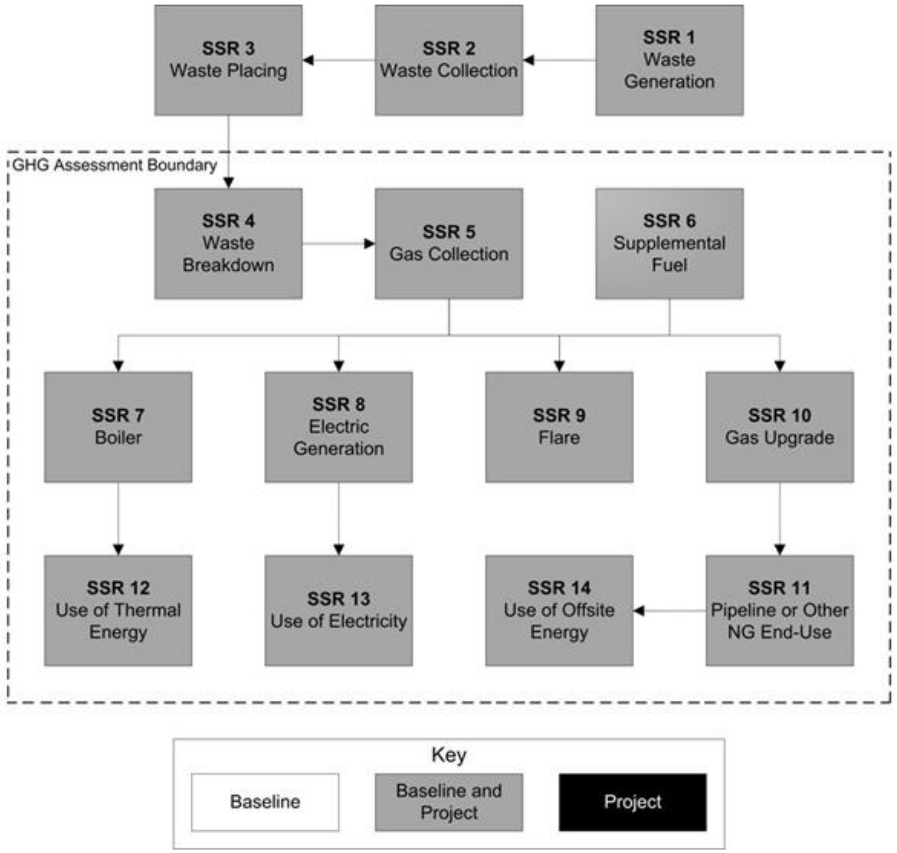
- Air and Water Quality
- Mitigation of Pollutants

Eligibility rules

Exclusions

- Projects using landfill gas for electricity generation are subject to a 10 MWe capacity threshold, excluding LFG-to-heat and LFG-to-natural gas projects. However, all LFG-to-energy projects must use the investment analysis tool to demonstrate additionality where required by the applicable Jurisdictional Module.

The GHG Assessment Boundary



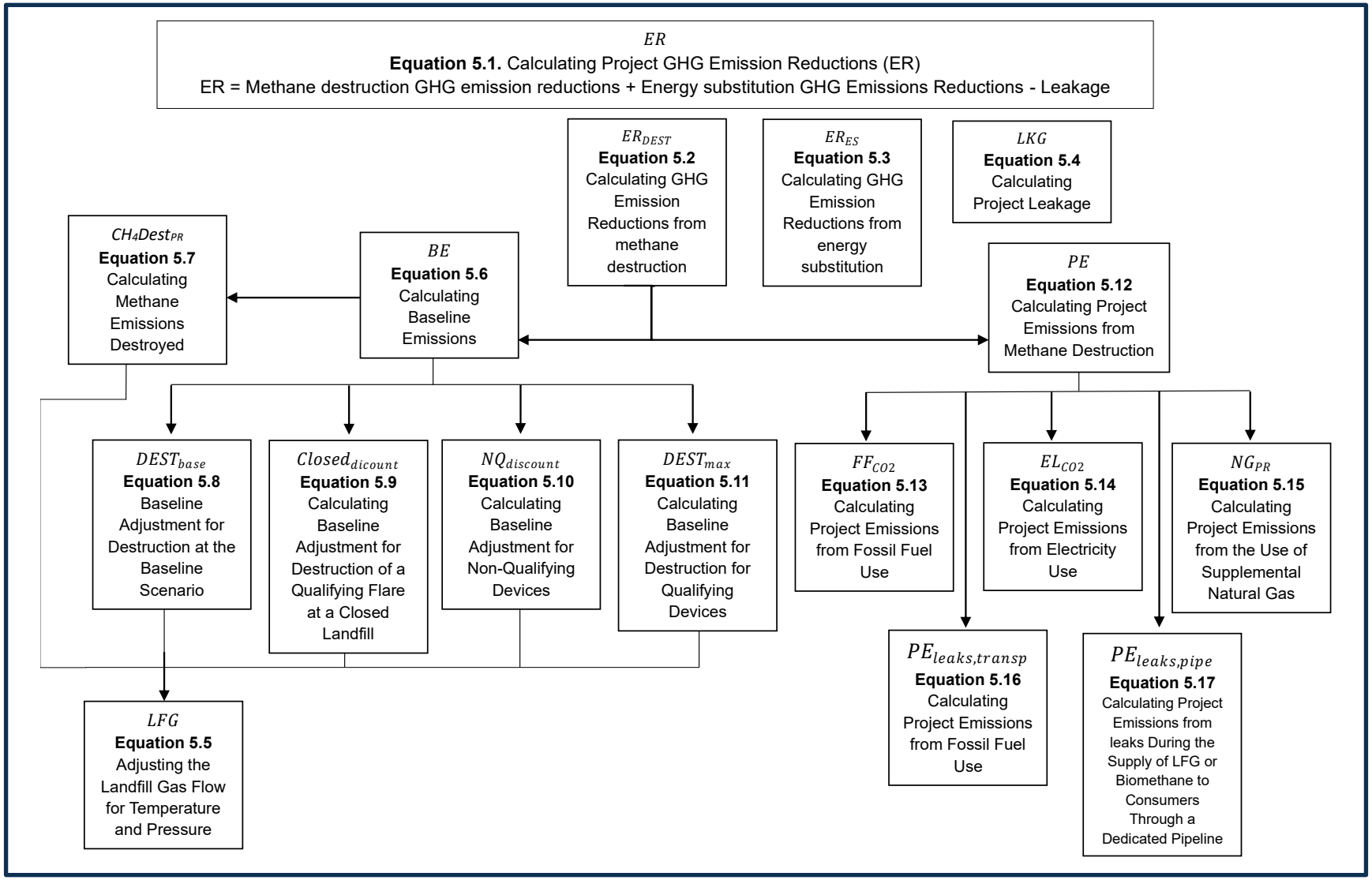
- New language and a new illustration of the GHG Assessment Boundary was included to consider LFG-to-energy activity.
- *Table 4.1 Summary of Identified Sources, Sinks, and Reservoirs* was updated accordingly.

Quantifying GHG Emission Reductions

- This Protocol now quantifies separately two distinct sources of GHG emission reductions:
  - ✓ Emissions reductions from methane destruction; and
  - ✓ Emissions reductions from the displacement of fossil fuels, natural gas or other GHG-intensive energy sources when recovered LFG or upgraded biomethane is used as an energy substitute.

- Emissions Reduction from the Displacement of GHG-Intensive Energy Sources shall be determined based on the project type and the intended use of the recovered landfill gas.
  - Jurisdiction Modules are used to determine the project's LFG to energy eligibility
  - These emissions are quantified separately by **accounting for the energy generated and using the Emission Factor of the baseline source of energy replaced**.

Quantifying GHG Emission Reductions



Monitoring Requirements

- Project Developers must monitor LFG destruction and energy recovery systems and provide verifiable evidence of emission reductions, with requirements tailored to the end use of the landfill gas.
- Energy production calculations or estimates must be transparent, conservative, and reproducible for verification.
- Quality assurance and quality control (QA/QC) requirements were added for electricity meters, and Table 6.1 was updated to reflect the new equations and parameters, with data units standardized to the International System of Units (SI).

Verification Guidance

- Verification Table 8.1, which summarizes the eligibility criteria, was updated to reflect the changes described above. Likewise, Tables 8.2 and 8.3, covering the verification items and quantification verification items, respectively, were updated accordingly.

Appendixes

- Appendix A, covering the Regulatory Framework Review, and Appendix B, covering the Development of the Performance Standard Threshold, were removed from the Core Protocol and incorporated into the Jurisdictional Modules.

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KEY CONSIDERATIONS

CHILE & ARGENTINA JURISDICTION MODULES

Adapting the Landfill Protocol to Argentina and Chile – Jurisdiction Modules

- Originally Mexico and U.S. Landfill Protocols were used as a base to facilitate protocol development
  - US and Mexico Landfill Protocols are comprehensive and have over 15 years since publication
  - Reviewed with Argentina and Chile stakeholders & underwent a Public Comment Period

- The main changes included:
  - Evaluated jurisdiction-specific laws and regulations applicable to the waste sector
  - Evaluated jurisdiction-specific data on waste management practices and sector common practice
  - Evaluated the need for applicable safeguards

- Jurisdiction Modules were developed accordingly

Legal Requirements Test

- The analysis to establish the legal requirement test evaluated Chile & Argentina-specific data on waste management practices.

- **The Reserve did not identify any regional, federal, provincial, or local law or legally binding mandate requiring landfill gas collection & destruction or renewable energy production.**

Performance Standard Test Development

- The analysis to establish the performance standard evaluated Chile & Argentina-specific data on waste management practices and sector common practice

- Although carbon markets have been and continue to be a key driver for incentivizing emissions reductions in the waste sector in Chile or in Argentina, **the Reserve determined that methane capture or destruction is not common practice for most of landfills or for the management of MSW in Chile or Argentina.**

- **LFG-to-energy projects:**
  Additionality must be demonstrated through an investment analysis showing that carbon credit revenues were essential to project implementation and that the project would not be financially viable without them.

Argentina & Chile Soil Oxidation Factor

- Methane oxidation by soil bacteria in landfill cover systems is highly site-specific, depending on soil type, moisture content, waste compaction, oxygen availability, and methane flux; Argentine & Chile landfill management practices and regulations are not specifically designed to maximize soil oxidation.

Type of Cover	Pre-project collection and/or destruction	OX
Synthetic	Yes	0
	No	0
Soil	Yes	0.384
	No	.10
No cover	Yes	.10

Conservative baseline factor:
For projects **without pre-project landfill gas collection or destruction**, an oxidation factor of **0.10** is applied, consistent with IPCC Guidelines and a conservative accounting approach.

Effect of pre-project gas collection:
For landfills with soil cover and **pre-project landfill gas collection and/or destruction**, an oxidation factor of **0.384** is applied. Gas collection reduces methane flux to the cover, increasing the fraction available for oxidation; this higher factor is consistent with the conservative approach under UNFCCC PACM.

Calculating Baseline Emissions in Chile

- For projects located in Chile, Equation 5.6 for the calculation of baseline emissions was adjusted to account for regulatory requirements pursuant to Supreme Decree No. 189/2005, which establishes a minimum volume of landfill gas that must be managed to ensure safety conditions.
  - In Equation 5.6, LRT_{Disc} is defined as the discount factor applied to account for regulatory requirements. For projects located in Chile, this factor was set at **5% (LRT_{Disc} = 0.05)**

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Q&A

Clarifying Questions

We welcome your input. Official comments must be submitted in writing by **October 23rd**

If you would like to ask a clarifying question:

- Please send a message to us via the chat function
- The message will only be sent to the Reserve as hosts (not all attendees)
- We will respond to as many comments/questions as possible

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NEXT STEPS

Next steps

- ***For interested stakeholders:***

  Please submit comments in Word or PDF format **by 5:00 pm PT on October 23, 2026**.

  To: policy@climateactionreserve.org

- ***For the Reserve:***
  - Review and respond to comments
  - Publish a summary document, along with the original received comments
  - Finalize the Protocol and Jurisdiction Modules based on comments
  - Present the final Protocol and Jurisdiction Modules to the board for adoption (November-December 2026)
  - Publish the final Protocol and Modules

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THANK YOU!