CLIMATE FORWARD

Improved Cook Stove Forecast Methodology

Public Comment Webinar

June, 2019

Agenda

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Program Overview

The Improved Cook Stove Forecast Methodology

1. Introduction
2. The GHG Reduction Project
3. Eligibility Rules
4. The GHG Assessment Boundary
5. Quantifying GHG Emission Reductions
6. Project Implementation Report
7. Reporting and Record Keeping
8. Confirmation Guidance

Questions

PROGRAM OVERVIEW

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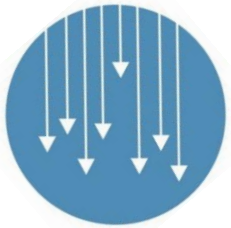
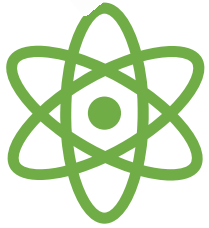


Invest now in emissions reduction projects to mitigate future emissions

- **Credits recognized today to address future impacts**



Expands the scope and scale of feasible climate action across the economy

- **Enormous potential for diverse, creative climate solutions**

Issues Forecasted Mitigation Units (FMU) to projects that follow Reserve-approved methodologies

- **1 FMU = one metric ton of anticipated CO_2e reduction, to counter anticipated GHG emissions**

Tracks FMUs and project activities in a publicly accessible database

- **A registry of forward-looking GHG reductions to balance against forward-looking GHG impacts**

Who should use Climate Forward?

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Companies and organizations mitigating future emissions

- Any new investment creating additional GHGs
- Not appropriate for addressing current emissions in a compliance program
  - e.g., cap-and-trade
- Not appropriate for mitigating historical emissions
- Companies seeking CEQA compliance

Examples of future mitigation needs

- New manufacturing facility
- New transportation projects
- New data center
- New retail complex
- New residential/commercial developments
- Future needs from current investments

Why forward crediting?

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A new paradigm, reducing barriers to entry for innovative, targeted climate solutions that can also achieve sustainability goals beyond climate impacts

- Customized climate projects with specific ***co-benefits*** tailored to align with organizational goals and values
- ***Local*** projects in communities directly affected by operations
- New opportunities: demonstrate climate ***leadership***

Section 1

INTRODUCTION

Process Overview

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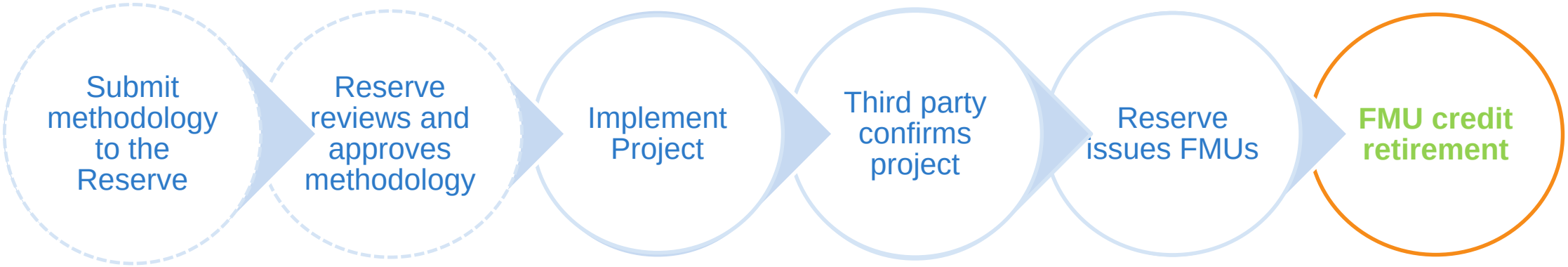

- Project proponents can develop projects using existing methodologies
- Methodologies provide standardization across project type and can be customized to enable unique place based projects
- 1 FMU = one metric ton of anticipated CO_2e reduction, to counter anticipated GHG emissions

Environmental Integrity

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Program Level	• Methodology Suitability Screening
	• Programmatic Risk Pool
	• Guidance on Appropriate Use of FMUs
Methodology Level	• Conservative Quantification Assumptions
	• Conservative Crediting Period
	• Performance Decline Deduction
	• Abandonment Deduction
Project Level	• Project Resilience Measures
	• Project Confirmation Timing

Project Monitoring and Confirmation

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- **No** ongoing monitoring requirement
  - Voluntary monitoring incentive
- One time “Project Implementation Report”
  - Project inputs, project information, and quantification
- One time project “Confirmation”
  - Confirmation Bodies: ISO14065 accredited VVBs + additional Reserve requirements
  - Confirmation against approved methodology and program rules

Voluntary Transition to Ex Post Credit Issuance

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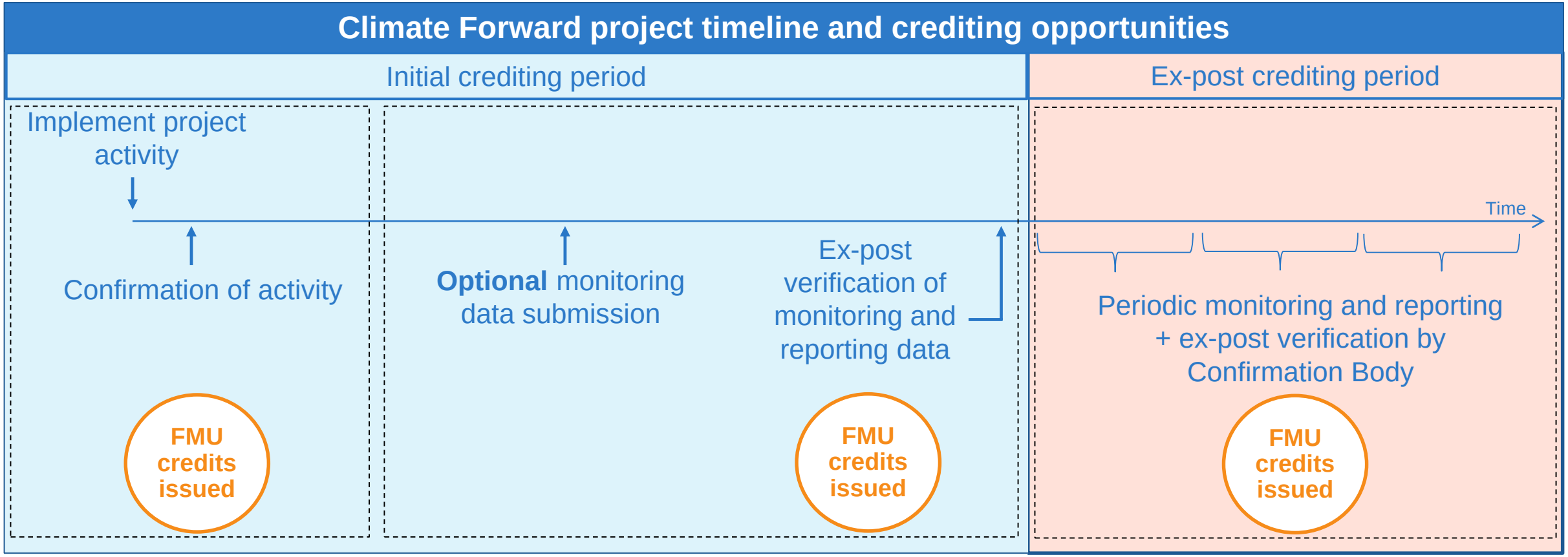
- After completion of ex-ante crediting period, **projects <u>may</u> opt to receive ex-post FMUs** upon project renewal and ongoing monitoring, reporting, and verification
- Projects that opt-in to the voluntary incentive program are eligible for this option



1. Introduction

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Improved Cook Stove Forecast Methodology accounts for emission reductions associated with energy efficiency improvements from **replacing inefficient baseline cooking stove devices with more efficient project devices**

Methodology provides: eligibility rules, methods to calculate expected reductions, performance-monitoring instructions, and reporting procedures

Projects receive **independent confirmation** by a Reserve-approved Confirmation Body (CB) selected by the Project Proponent (PP)

Forecasted Mitigation Units (FMUs) are awarded on an ***ex ante*** basis following the application of this methodology and confirmation of project implementation

1. Introduction

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Pilot projects:

- Several batches implemented in Zambia
- C-Quest Capital acting as project developer
- Local partners including COMACO
- 1 pilot involved 10,000 new Rocket stoves
- 14 tCO_2e emissions reduced per stove
- 3-4 tonnes of firewood saved per stove per year

Section 2

THE GHG REDUCTION PROJECT

2.1 Project Definition

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Introduction of eligible, efficient cook stoves, utilizing non-renewable woody biomass, replacing less-efficient biomass-fired cook stoves

- **Woody biomass fuel reduction = GHG emission reduction**

A project will involve the installation of a **batch** of multiple eligible project devices. The entire batch shall constitute one “project.”

Eligible project devices / locations / default parameters / emission factors are listed in a separate ***Improved Cook Stove Forecast Methodology Parameters*** document

- Reserve must approve specific project devices and parameters prior to project listing

- Third-party confirmation bodies will confirm projects are using correct values, but will not need to review background documentation itself

2.1 Project Proponent (PP)

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An entity that has an active account on the Climate Forward registry, submits a project for listing and registration with the Reserve, and is ultimately responsible for all project reporting and confirmation

Required Attestations:

- Attestation of Title
- Attestation of Legal Additionality
- Attestation of Regulatory Compliance

Section 3

ELIGIBILITY RULES

3. Eligibility Rules

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I LOCATION

- Eligible locations identified in parameter doc

II START DATE & CREDITING PERIOD

- Submitted for listing within 12 months of batch installation
- Crediting period defined by project device lifetime

III ADDITIONALITY

- Meet performance standard
- Exceed regulatory requirements

3. Eligibility Rules (cont'd)

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IV ENVIRONMENTAL & SOCIAL SAFEGUARDS & REGULATORY COMPLIANCE

- Compliance with all applicable laws, no negative impacts
- Optional, voluntary reporting on non-GHG environmental and social benefits

V OWNERSHIP & DOUBLE COUNTING

- No credits from other mitigation programs, where GHG accounting boundaries overlap

VI PROJECT RESILIENCE MEASURES

- Must address risks of project failure and non-performance

3.3 Additionality

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Projects must yield surplus GHG emission reductions “additional” to what would have occurred in the absence of the project

1. **The Performance Standard Test**
   - Must be common practice for less efficient stove to be used for food preparation and water heating in the project region
2. **The Legal Requirement Test**
   - Use of efficient cook stoves must not be required by law (rules, regulations, legal mandates, etc.) by any authority with jurisdiction over the project

3.4 Environmental & Social Safeguards

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Projects must not materially undermine progress on environmental & social issues

- Efficient cook stove installations are not environmentally intensive
- Negative environmental or social impacts are unlikely (must be confirmed)

PPs shall confirm no negative environmental and social impacts are expected, and describe any measures taken to avoid any such impacts

PPs are encouraged to voluntarily report any non-GHG benefits, including any alignment with the **United Nations' Sustainable Development Goals**

3.4 Regulatory Compliance

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Project proponents must also sign an Attestation of Regulatory Compliance prior to project confirmation:

- No laws broken during confirmation period
- No laws will be broken during the CP
- Mitigation measures have been and will continue to be implemented for the CP

3.5 Ownership & Double Counting

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Evidence of **transfer of rights of all emission reductions** to the PP is required and must be confirmed by the CB

- The PP must provide a signed Attestation of Title document and any necessary supporting evidence for each project
  - Must attest they have **exclusive claim** to the project's GHG reductions
  - Must attest that no other entities are reporting or claiming the project's GHG reductions
- CBs must review relevant contracts, agreements, and/or supporting documentation between project proponents, end users, utilities, and other parties that may have a claim to the FMUs generated by the project

3.7 Project Resilience Measures

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Project Proponent must submit project-specific approach to resilience measures (approved by Reserve) including, at a minimum:

- Provide sufficient information to users and community regarding:
  - How to properly use stoves
  - Best practices for maintenance
  - How to access service and support;
- Ensure sufficient provision is made for parts and servicing of project stoves throughout crediting period

3.7 Project Resilience Measures

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Zambia cook stove pilot project – Resilience Measures included:

- Distributed
  - repair equipment to various distributors and field coordinators
  - posters and brochures to local service agents with simple info on operating / maintenance / repair practices
  - contact info for local service agents
- Separate budget put aside for implementing the above

During site visits the CB conducted interviews and physically observed these measures – to confirm they were being implemented

Section 4

THE GHG ASSESSMENT BOUNDARY

4. The GHG Assessment Boundary

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SSR	Source Description	Baseline/ Project	GHG	Included?
1	Combustion of non-renewable biomass for cooking using biomass-fired cook stove	Baseline / Project	CO_2	**Yes**
			CH_4	**No**
			N_2O	
2	Procurement of non-renewable biomass fuel for cooking fuel	Baseline / Project	CO_2	**No**
			CH_4	
			N_2O	
3	Production of efficient cook stoves	Project	CO_2	**No**
			CH_4	
			N_2O	
4	End of life management of efficient cook stoves	Project	CO_2	**No**
			CH_4	
			N_2O	

GHG sources, sinks, and reservoirs (SSRs) that must be assessed and confirmed to determine the net change in emissions caused by installing efficient cook stoves

CO_2 emitted during the combustion of woody biomass is quantified to determine emission reductions

Section 5

QUANTIFYING GHG EMISSION REDUCTIONS

5. Quantifying GHG Emission Reductions (overview)

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GHG emission reductions from each project are quantified by estimating reduced consumption of cooking wood, based on increased efficiency rating of project stove relative to baseline stove

- **Baseline**: the continued use of less efficient baseline cook stoves
- **Project:** use of more efficient project stoves by multiple households (“batch”)
- **Emission Reductions:** avoided CO_2 from combustion of woody biomass

ERs are quantified for the lifetime of the project and issued following successful confirmation

5. Quantifying GHG Emission Reductions (overview)

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- Calculating woody biomass saved per project device / household
  - **Woody biomass reduced** = (annual baseline woody biomass) * (improved efficiency)
- Estimating performance decline / abandonment rates **(*ex ante* risk)**
  - **Performance decline** estimated using expected annual loss of thermal efficiency
  - Estimate rate **project devices abandoned** based on relevant research
- Calculating emission reductions by project batch
  - **Sum together emission reductions per device** = (reduced woody biomass) * (number of devices) * (expected performance decline) * number of devices
- Calculation GHG emission reductions
  - **Total emission reductions** = (sum of ERs from all devices) * (expected device lifetime)

Section 6

PROJECT IMPLEMENTATION REPORT

6. Project Implementation & Documentation

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Must be established for all project monitoring and reporting activities, specifying how data for all relevant parameters will be collected and recorded

Serves as the basis for the CB to confirm that the monitoring and reporting requirements have been met

Project Implementation Report:

- Frequency of data acquisition
- Parameter values
- Role of individuals performing key duties
- Procedures followed to ascertain & demonstrate project passes Legal Requirement Test
- Demonstrate Project Resilience Measures have been implemented

Section 7

REPORTING AND RECORD KEEPING

7.1 Project Submittal Documentation

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Required documentation:

LISTING:

- Project Submission form

CONFIRMATION:

- Signed Attestation of Title form
- Signed Attestation of Legal Additionality form
- Signed Attestation of Regulatory Compliance form
- Project Implementation Report
- Confirmation Report, and Confirmation Statement
- From CB: confirmation plan, sampling plan, and list of findings (not made public)

7.3 Reporting and Confirmation Period

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Forecasted GHG reductions from the project are reported for the entire crediting period

Confirmation Period: period of time over which project implementation has been confirmed – spans from start date to time final Confirmation Report submitted

Confirmation activities cannot commence until the project is Listed by the Reserve, and the entire project batch has been installed

Confirmation must conclude, and a Confirmation Statement must be issued, no later than **two years** after the project start date

7.4 *Ex post* Verification

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PPs have the option to undertake *ex post* verification **once crediting period has concluded**

Ex post quantification shall reflect **actual project performance**, without default *ex ante* risk estimates (reflecting true performance decline and abandonment rates)

Site visit is required during *ex post* verification

At this time the methodology does not prescribe detailed *ex post* verification procedures; **guidance must be sought from the Reserve** prior to commencement of any *ex post* verification

Section 8

CONFIRMATION GUIDANCE

8. Confirmation Guidance

Confirmation guidance supplements the Program Manual and Confirmation Manual and describes confirmation activities specifically related to cook stove projects listed or registered under this methodology

CBs trained to confirm cook stove projects must be familiar with the following:

- Climate Forward Program Manual
- Climate Forward Confirmation Manual
- Improved Cook Stove Forecast Methodology (this document)
- Improved Cook Stove Forecast Methodology Parameters

8.1 Standard of Confirmation

Accredited Confirmation Body must confirm project has been implemented as described in the forecast methodology – and that estimated emission reductions have been calculated accurately

Both a desktop review and a site visit are necessary

The Confirmation body also confirms project resilience measures have been implemented, to ensure longevity of the project

Confirmation activities may commence immediately after the PP has completed all implementation activities

8.2 Confirming the Project Implementation Report

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PIR serves as the basis for CBs to confirm that monitoring and reporting requirements have been met

CBs must do the following:

- Assess the compliance of the PIR with the requirements of the methodology, Climate Forward Program Manual, and the Climate Forward Confirmation Manual
- Confirm that the PIR includes all necessary parameters
- Assess the means of implementation of the project data capture, including data management and quality assurance and quality control procedures, and determine whether these are sufficient to ensure the accuracy of forecasted emission reductions

8.3 Core Confirmation Activities

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Core confirmation activities incorporate both a desktop documentation review and site visit assessment of the mitigation project as follows:

1. Reviewing GHG management systems and estimation methodologies

- Review and assess the appropriateness of the methodologies and management systems that the PP uses to gather data and calculate baseline and project emissions

2. Confirming emission reduction estimates

- Investigate areas that have the greatest potential for material misstatements and then confirms whether material misstatements have occurred
- Recalculate a representative sample of the performance or emissions data for comparison with data reported by the PP in order to confirm the GHG emission reduction calculations

8.3 Core Confirmation Activities

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3. Undertaking site visits

- CB must randomly sample households and stoves from each project batch, and visit households to inspect stoves and establish whether reported existence and use of project stove is as recorded in the PIR
- Review and discuss with the PP, and any supporting local agents, evidence of continued implementation

4. Confirming evidence of continued implementation

- Project Proponent will submit project-specific approach to resilience measures (approved by Reserve) to satisfy Section 3.7
- Confirmation site visit will include assessment of these measures

QUESTIONS?

Contact Information

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