GOLD STANDARD VERIFICATION REPORT

ENHANCED DISTRIBUTION OF EFFICIENT COOK STOVES IN HONDURAS

(Gold Standard ID Number GS690)

MONITORING PERIOD:
01 DECEMBER 2011 TO 30 NOVEMBER 2012

REPORT NO. 2012-9728
REVISION NO: 01

DET NORSKE VERITAS

GOLD STANDARD VERIFICATION REPORT

Date of first issue: 12 February 2013	Project No.: PRJC-419017-2012-CCS-USA
Approved by: Michael Lehmann	Organizational unit: DNV Climate Change Services AS
Client: Proyecto Mirador	Client ref.: Esther Adams

DNV CLIMATE CHANGE SERVICES AS
VERITASVEIEN 1,
1322 HØVIK, Norway
Tel: +47 67 57 99 00
Fax: +47 67 57 99 11
http://www.dnv.com
Org. No: NO 994 774 352
MVADet Norske Veritas.

Summary:
DNV Climate Change Services AS (DNV) has performed the verification of the emission reductions reported for the "Enhanced Distribution of Efficient Cook Stoves in Honduras Project" in Honduras (Gold Standard Ref. No. GS690) for the period 01 December 2011 to 30 November 2012.

In our opinion, the GHG emission reductions reported for the project in the monitoring report (Version 04) of 11 February 2013 are fairly stated.

The GHG emission reductions were calculated correctly on the basis of the GS approved monitoring methodology "Methodology for Improved Cook-stoves and Kitchen Regimes V.01" and the monitoring plan contained in the revised Project Design Document of 11 February 2013.

DNV Climate Change Services AS is able to certify that the emission reductions from the "Enhanced Distribution of Efficient Cook Stoves in Honduras Project" during the period 01 December 2011 to 30 November 2012 amount to 78 023 tonnes of CO_2 equivalent. Of this total, 4 688 tonnes of CO_2 equivalent were generated in 2011, and 73 335 tonnes of CO_2 equivalent were generated in 2012.

Report No.: 2012-9728		Subject Group Environment		Key words:
Report title: ENHANCED DISTRIBUTION OF EFFICIENT COOK STOVES IN HONDURAS PROJECT				Gold Standard Additionality Sustainable Development
Work carried out by: Kyle Silon, Misheck Kapambwe				☒ No distribution without permission from the Client or responsible organizational unit
Work verified by: Weidong Yang				☐ Limited distribution
Date of this revision: 17 March 2013	Rev. No.: 02	Number of pages: 24 (excluding annexes and cover page)		☐ Unrestricted distribution

Abbreviations

CAR	Corrective Action Request
CDM	Clean Development Mechanism
CER	Certified Emission Reduction
CL	Clarification Request
CO_2e	Carbon Dioxide Equivalent
DNV	Det Norske Veritas
DOE	Designated Operational Entity
DRB	Demonstrably Renewable Biomass
ER	Emission Reduction
GHG	Greenhouse Gas(es)
GS	Gold Standard
HH	Household
KS	Kitchen Survey
KT	Kitchen Performance Test
MP	Monitoring Plan
NRB	Non-Renewable Biomass
PDD	Project Design Document
PP	Project Participant

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1 INTRODUCTION

Proyecto Mirador has commissioned DNV Climate Change Services AS (DNV) to carry out the verification and certification of emission reductions reported for the "Enhanced Distribution of Efficient Cook Stoves in Honduras Project" (hereafter called "the project") during the period 01 December 2011 to 30 November 2012.

This report summarizes the findings of the verification and contains a verification statement for the certified emission reductions.

1.1 Objective

Verification is the periodic independent review and ex post determination by a Designated Operational Entity (DOE) of the monitored reductions in GHG emissions that have occurred as a result of the registered GS project activity during a defined monitoring period.

Certification is the written assurance by a DOE that, during a specific period in time, a project activity achieved the emission reductions as verified.

The objective of this verification was to verify and certify emission reductions reported for the "Enhanced Distribution of Efficient Cook Stoves in Honduras Project" (hereafter called "the project") during the period 01 December 2011 to 30 November 2012.

1.2 Scope

The scope of the verification is:

- To verify that actual monitoring systems and procedures are in compliance with the monitoring systems and procedures described in the monitoring plan.
- To evaluate the GHG emission reduction data and express a conclusion with a reasonable level of assurance about whether the reported GHG emission reduction data is free from material misstatement.
- To verify that reported GHG emission data is sufficiently supported by evidence.

The verification shall ensure that reported emission reductions are complete and accurate in order to be certified.

1.3 Description of the Project Activity

Proyecto Mirador is an organization that disseminates fuel-efficient stoves and utilizes carbon finance to provide a market-based financial solution to address the problems of deforestation, indoor air pollution, global warming, and slow economic development through the creation of microenterprises in rural Honduras. Construction of fuel-efficient stoves by Proyecto Mirador began in June, 2004. Using a uniquely designed stove called "Estufa Dos por Tres", these stoves are now used in project beneficiaries' homes an average of 6.5 hours per day, every day.

The PP donates to each beneficiary the steel cooktop (plancha), the chimney and chimney top, and the six custom ceramic pieces for the stove mouth or firebox, and the installation and training. These components are sourced and manufactured locally in Santa Barbara Province, creating local jobs through eight material provider businesses. Beneficiaries contribute the

remaining components, including cement, rebar, bricks, adobe blocks and wood ash, all of which are common items available in all villages of Honduras. This cost-sharing arrangement is part of Proyecto Mirador's philosophy of "No Cuesta, No Cuida," which asserts that beneficiaries will better care for their donated stove if they invest some of their own resources in its acquisition. Old stoves are removed at the time the new Estufa Dos por Tres stoves are installed.

In recent years, with the growth of the project, Proyecto Mirador now has a "Programa de Contratistas" (Associates Program), which has greatly aided them in scaling up their project. In this microenterprise program, entrepreneurs are trained and paid by Proyecto Mirador to build and install Estufa Dos por Tres stoves under Proyecto Mirador's leadership and verification. The project has installed 34 130 stoves since the project start date across 4 provinces in western, rural Honduras. For this specific verification period, 17 000 stoves were installed in rural Honduran homes.

During this verification period, a Design Change Request was approved by the Gold Standard, allowing the PP to:

1. Modify the f_{NRB} assessment to follow the NRB assessment provided in the updated Gold Standard methodology "Technologies and Practices to Displace Decentralized Thermal Energy Consumption", and
2. Expand the project boundary to the entire country (though stoves were not distributed in the expanded boundary).

The previously registered PDD /2/ was revised by the PP to account for these changes, and the revised PDD /1/ was approved by the Gold Standard /7/. Two FARs were issued by the Gold Standard in the Design Change Review /7/, requiring the DOE to verify that the changes were correctly implemented. DNV's review of the design changes are discussed in detail below.

Title of Project Activity	Enhanced Distribution of Efficient Cook Stoves in Honduras Project
Gold Standard ID Number	GS690
Baseline and monitoring methodology	GS approved methodology "Methodology for Improved Cook-stoves and Kitchen Regimes V.01"
Project Entity	Proyecto Mirador 919 Sir Francis Drake Blvd., Suite 201 Kentfield, CA 94904 +1 415-925-1887
Location of the project activity	Honduras
Period verified in this verification	01 December 2011 to 30 November 2012

1.4 Methodology for determining emission reductions

The methodology used for the estimation of the emission reduction is in line with the GS approved methodology, *Methodology for Improved Cook-stoves and Kitchen Regimes,* Version

01 /34/. According to the applied methodology, the emission reductions are determined as the difference between baseline emissions, project emissions and leakage:

$ER_y = BE_y - PE_y - LE_y$

BE_y is the sum of annual emissions from the continued use of baseline stoves. This scenario was captured by assessing fuel-wood supply, consumption patterns and environmental behaviors among households that use traditional wood stoves, or "fogones". These data define the baseline situation, which was used to characterize conditions that would prevail in the absence of the project activity. The baseline is defined based on the assumption that, in the absence of project activity, all households in the community would continue to utilize the traditional "fogon".

PE_y represents the sum of annual emissions from the use of project stoves. Project emission calculations use an estimated 3.31 $mtCO_2e$/year/stove (described in more detail in section 3.5). The improved stoves are installed progressively over time, so project emissions are calculated based on the number of stoves installed and the annual operating period.

The emissions reductions calculation assumes an estimated leakage of zero (0) tCO_2/year. This value is substantiated by qualitative surveys reviewed during the site visit /20/, in the table "**ID 12 / Leakage**", showing that leakage is negligible in this instance.

2 METHODOLOGY

The verification of the emission reductions stated in the monitoring report has assessed all factors and issues that constitute the basis for emission reductions from the project. These include:

- Review of project documentation;

- On-site inspections, including the review of performance records, interviews with project participants, observation of collection of measurements, established practices;

- Review of monitoring results and verification of the correct application of the monitoring methodologies

Verification Team

Role/Qualification	*Last Name*	*First Name*	*Country*	*Type of involvement*						
				Desk review	Site visit / Interviews	Reporting	Supervision of work	Technical review	TA Competence (14)	TA Competence (3.2)
Team Leader (Verifier)	Silon	Kyle	USA	√	√	√	√			√
Sector Expert (review of fNRB calculations)	Kapambwe	Misheck	Australia	√					√	
CDM Technical reviewer	Yang	Weidong	USA					√		√

Duration of Verification

Preparations: 03 November 2012 – 30 November 2012

On-site verifications: 3 December 2012 – 7 December 2012

Reporting, calculation checks and QA/QC: 10 December 2012 – 8 February 2013

2.1 Desk Review of the Project Documentation

This is the third verification for the project. The desk review was conducted prior to the site visit. The verification has been performed based on the review of the following documentation:

- The monitoring report /2/
- The PDD, including the monitoring plan /1/
- The validation report /40/
- The first /41/ and second /42/ verification reports
- The approved baseline and monitoring methodology applied by the project /35/
- The usage survey report for HH cook stoves, ages 0-1 years and 1-2 years /8/
- Kitchen Performance Tests conducted to determine the amount of fuel consumed /9//10/
- Sales Records /19/

During the desk review, DNV applied standard auditing techniques to assess the quality of information provided. The following activities were performed:

- A review of the data and information presented to verify their completeness,

- A review of the monitoring plan and monitoring methodology, paying particular attention to the frequency of measurements, sampling plan for survey and the quality assurance and quality control procedures; and
- An evaluation of data management, and the quality assurance and quality control system in the context of their influence on the generation and reporting of emission reductions.

2.2 Site Visit

A site visit was conducted on 3-7 December 2012. Different sets of interviews were conducted during the site visit on separate days, as summarized in Table 4.

Table 4: Summary of Site Visit Interviews

Date	Attendees	Discussion Topics
3 December 2012	**Richard Lawrence,** Proyecto Mirador, CEO **Esther Adams,** Proyecto Mirador, Program Manager **Emilia Giron de Mendoza**, Proyecto Mirador, Country Director **Elder Mendoza,** Proyecto Mirador, Chief Operating Officer **Evans Hernandez,** Proyecto Mirador, IT Manager	1. Review of calculations 2. Cross-check of invoices vs. Sales Database 3. Status of implementation of project activity
4/5/6 December 2012	Households/Project Beneficiaries	Sample of Household Survey Questions: 1. When and from whom did you receive your improved stove? 2. What type of stove/fuel did you use before this purchase? 3. How often do you use the improved stove? 4. Since purchasing your improved stove, do you still use your traditional stove? How often? 5. What benefit do you observe from

		the use of the new cook stove? • If you purchase/d wood, how much did you spend before/after purchase of the new stove? • If you collect wood, how much time does it take to collect wood before/after purchase of the new stove? • Have you observed improved air quality in the house? 6. How many people do you cook for?
6 December 2012	**Esther Adams,** Proyecto Mirador, Program Manager Maira Castellano, Proyecto Mirador, Director of Supervisors Sandra Hernandez, Proyecto Mirador, Ejecudor **Juan Carlos**, Proyecto Mirador, Technician	1. Duration of employment 2. Training received 3. Salary relative to minimum wage 4. Holidays/rest time received 5. Comparison of this job to previous job
6 December 2012	**Esther Adams**, Proyecto Mirador, Program Manager **Evans Hernandez,** Proyecto Mirador, IT Manager	1. Method of recording sales 2. Methods of record upkeep/back-up
6 December 2012	Esther Adams, Proyecto Mirador, Program Manager **Martin**, Proyecto Mirador, HR Manager	1. Methods/Records of staff trainings 2. Training plans for 2013
6 December 2012	**Richard Lawrence,** Proyecto Mirador, CEO **Esther Adams,**	1. Status of implementation of project activity 2. Review of QA/QC procedures

	Proyecto Mirador, Program Manager	3. Review of CARs/CLs 4. Closing Remarks

During the site visit, DNV applied standard auditing techniques to assess the quality of information provided. The following activities were performed:

- A cross-check between information provided in the monitoring report and data from other sources such as the sales database, kitchen surveys and kitchen tests;
- A review of calculations and assumptions made in determining the GHG data and emission reductions; and
- A review of QA/QC procedures in place to prevent, or identify and correct, any errors or omissions in the reported monitoring parameters.

Acceptance sampling was used to confirm the PPs monitoring results. According to the American Military Standard and Table for Inspection by Attributes Level II, a sample size of 100 is required to verify a data set of 17,000 stoves (17,000 stoves were distributed during this monitoring period). DNV randomly selected 100 records, and can confirm that all data was accurately transcribed to the emission reduction calculations.

DNV further cross-checked the results during HH surveys. 25 surveys of beneficiary households (HH) were conducted. The location of the surveys was determined mainly taking into consideration logistical and cultural norms prevalent in the relative area. Therefore, DNV decided to focus on sales within the Santa Barbara province, as this region had the greatest number of stove sales. Within this region, several villages representing at least two of the larger stove distributor sub-contractors with the greatest number of sales were identified, and individual homes surveyed were selected at random, depending on which families were at home during the time of the visit.

Through the above-mentioned activities, the following aspects of the Gold Standard project activity were confirmed:

- The implementation and operation of the project activity are as described in the monitoring plan in the revised GS-VER-PDD /1/;
- The information flow for generating, aggregating and reporting of the monitored parameters;
- The operational and data collection procedures are implemented in accordance with the monitoring plan in the revised PDD /1/;
- Procedures to avoid pitfalls of double-counting.

2.3 Report of findings

A corrective action request (CAR) is issued, where:

- Non-conformities with the monitoring plan or methodology are found in monitoring and reporting, or if the evidence provided to prove conformity is insufficient;

- Mistakes have been made in applying assumptions, data or calculations of emission reductions which will impair the estimate of emission reductions;
- Issues identified in a FAR during validation to be verified during verification have not been resolved by the project participants.

A clarification request (CL) shall be raised if information is insufficient or not clear enough to determine whether the applicable GS requirements have been met.

A forward action request (FAR) is issued for actions if the monitoring and reporting require attention and/or adjustment for the next monitoring period.

The list of CLs, FARs, and CARs has been described in detail in Appendix A. Four clarification requests (CL) and one FAR have been raised as part of the verification crediting period. No corrective action requests (CAR) were raised. All CLs have been closed based on the customer's response

3 VERIFICATION FINDINGS

This section summarizes the findings from the verification of the emission reductions reported for the Project during the period 01 December 2011 to 30 November 2012.

3.1 Remaining issues, CARs, FARs from previous validation/verification

This is the third periodic Gold Standard verification for the Project. There are no follow-up action requests remaining from the validation. However, 2 FARs remained from the second verification. As discussed in Table A-1 of the Appendix A, the PP has adequately addressed these FARs.

3.2 Project Implementation

During the verification period, the PP submitted two design change requests to the Gold Standard, requesting approval of the following:

1 – Expansion of the project boundary to include all of Honduras /5/

The original project boundary was defined as the geographic area of western highlands in Honduras including the provinces of Santa Barbara, Copan, Lempira, and Intibucca. The design change expands this area to the entire country. The Gold Standard confirmed this was acceptable, and requires the PP to proceed with qualitative Kitchen Surveys for each new province as expansion occurs /7/. The PP submitted KS to cover expansion into 4 provinces, Comayagua, Atlantida, Ocotepeque, and Cortes /27/. DNV conducted acceptance sampling and confirmed that the KS were adequately conducted. See Section 3.4 for further discussion.

2 – Redefine the NRB factor in accordance with the CDM calculation methodology, as allowed by the Methodology for Improved Cook-stoves and Kitchen Regimes.

This request was approved by the Gold Standard /7/. DNV conducted a review of the updated calculation and can confirm it is acceptable, as discussed in detail below in section 3.4.

DNV was able to confirm that the project is implemented in accordance with the project description contained in the revised PDD dated 11 February 2013 /**1**/. The starting date of operation of the project activity was 1 May 2009. The PDD assumes a project build rate of

3,500 stoves during the first year of the crediting period, with the build rate increasing by 8% per year for each subsequent year of the crediting period. The project is ahead of schedule in meeting its objectives as stated in the PDD and as confirmed from the sales records provided by the PP.

The project has constructed and distributed only that technology that was included in the PDD, including the sale of 34 130 stoves /11/, as follows:

- 6,621 stoves installed in the First Verification Period (01 May 2009 – 31 November 2010)
- 10,509 stoves installed in the Second Verification Period (01 December 2010 – 30 November 2011)
- 17,000 stoves installed in the Third Verification Period (01 December 2011- 30 November 2012)

The numbers used for emission reduction calculations in the monitoring report based on net stoves in operation (rather than the gross number of stoves built), and adjusted for drop-off and stove degradation rates, increasing appropriately by year.

The verification team confirmed, through visual inspection that all physical features of the proposed project activity including data collection systems and storage have been implemented in accordance with the PDD. DNV confirmed during the on-site visit that the project was completely operational in this monitoring period.

3.3 Compliance of monitoring plan with monitoring methodology

DNV can confirm that the monitoring plan contained in the revised PDD of 11 February 2013 is in accordance with the approved methodology applied by the project activity.

3.4 Compliance of monitoring with monitoring plan

Previously, all monitoring was being recorded on hard copies and transferred to an electronic database. During this monitoring period, the PP has implemented an electronic monitoring system based on the Salesforce.com platform, allowing monitoring data to be recorded on smartphones and uploaded directly to the electronic database. DNV reviewed the new system during the site visit. The system became fully operational during this monitoring period, though some data was still collected via hardcopy under the previous system. The monitored data and overall workflow remain unchanged. DNV can confirm that the monitoring is done in compliance with the monitoring plan.

In general, the monitoring plan requires the following continuous monitoring tasks:

Table 1: Continuous Monitoring Requirements

Methodology Requirement	DNV Assessment
Maintenance of a Total Sales Record	DNV has reviewed the sales records /19/ which the PP has maintained in both electronic and paper form. The records include all data required by the methodology. Furthermore, DNV crosschecked randomly selected electronic records to ensure that they accurately reflected the respective paper records of each sale and further verified a

	sample of these while conducting the Site Visit.
Maintenance of a Detailed Customer Database and Monitoring KS's	The PP has maintained a detailed customer database which includes the baseline KS, as well as the quarterly monitoring KS's. These results have also been compiled into an electronic format for this monitoring period /27/. During this monitoring period, the PP surveyed 237 HH that also included leakage, sustainability and qualitative fuel-wood use data /20/. The results of these surveys have been compiled and have also been stored electronically. Interviews were conducted in person by project staff. The questions asked during the interviews included all questions required by the methodology, as well as all additional project-specific questions as required. Finally, the results of the monitoring KS suggest that the characteristics of the population in the total sales record are equivalent to the characteristics of the HH included in the KTs /27/. As discussed above, the Gold Standard approved an expansion of the project boundary, and the PP was required to conduct additional KS's for each new province. In accordance with the applied methodology, the PP conducted a total of 100 surveys, as the group size is greater than 1000, with 25 surveys conducted in each new province added: Ocotepeque, Corest, Atlantida and Comayagua. DNV verified this sample as follows: DNV randomly selected 20 surveys and confirmed that the results shown on the hardcopy were accurately transcribed into the PPs database. DNV further cross-checked the hardcopy results by visiting 5 of the randomly selected HHs, and also administered the leakage surveys to additional HHs that were visited during the site visit. DNV can confirm that all results were accurately transcribed, and that HH visits conducted by DNV match the PPs results. It should be noted that at the time of DNV's site visit, only 40 of the 100 required

	KSs had been conducted in the expanded provinces, and therefore DNVs sample was drawn from the 40 KSs that had been completed rather than the entire 100 KS. As the PP is monitoring the key baseline characteristics of HHs that receive stoves, and will only distribute to HHs that meet the cluster definition, DNV found this to be acceptable. Therefore, the baseline and project values determined during this monitoring period are appropriate for use in the calculation of emission reductions.
Updating of Project Database	The Project Database includes all information required by the methodology, including sales by cluster, results of the KSs and KTs, factors affecting emission reductions, and adjustments to emission reduction calculations.

In addition, the following periodic monitoring tasks are found in Table 2:

Table 2: Periodic Monitoring Requirements included in Monitoring Report

Monitoring Requirement	DNV Assessment
NRB fraction should be re-assessed at least every 2 years	This value was re-assessed during this monitoring period. DNV's review is below.
Leakage estimates should be re-assessed at least every 2 years	According to the approved monitoring plan, leakage is monitored via 2 parameters: - ID 13 / Leakage Due to Transportation – This parameter is measured as the ratio of total mileage (as reported by mileage records) compared to the total number of stoves built. This ratio for the third monitoring period was found to be 10.16%, well below the 15.61% baseline established in the first verification. DNV reviewed the records and calculations and can confirm that they are accurate /25/. As the ratio is less than that established at validation, this source of leakage can be assumed to be 0. - ID 12 / Leakage – This parameter is measured through HH surveys. 237

	surveys were conducted. DNV reviewed the surveys and cross-checked the results during the site visit /20/, and can confirm that the survey results are accurately stated, and that this source of leakage is 0. Therefore DNV can confirm that leakage emissions for this monitoring period are 0.
A usage survey should be undertaken at least every 2 years	The PP included a usage survey as part of the quarterly monitoring during this monitoring period to understand the drop-off rate in HH stove usage over time **/8/**. DNV reviewed the surveys and cross-checked the results during the site visit and can confirm that the drop-off rates are accurately stated.
Aging Stove KT should be undertaken not less frequently than every 2 years for sales made in the first year	The PP commissioned an aging stove KT for stoves in their 2nd and 3rd year of operation. The study was conducted by Rob Bailis at the Yale School of Forestry /9//10/, the same entity that completed the KTs prior to validation, and DNV can confirm that the team is suitably qualified to conduct the work. The study found no decline in stove efficiency between the 2nd and 3rd year of operation. A similar study conducted during the previous monitoring period found that stove efficiency declined 6% between the 1st and 2nd year of operation. Rather than assume 0% decline between years 2 and 3 (as found in the study), the PP applied the 6% decline (similar to the decline between years 1 and 2) in order to be conservative. As this is conservative relative to the study results, DNV found it to be acceptable.
Baseline monitoring KT, as required	The monitoring plan requires baseline monitoring KTs to be conducted if the monitoring KS reveals that baseline parameters have changed significantly. The monitoring KSs did not suggest that the baseline parameters changed during the monitoring period /2//3/, and therefore the PP was not required to conduct a KT.
New Stove KT	The PP conducted these KTs in August of 2011 and they were reviewed during the

	previous verification. No new stove KTs were required during this monitoring period.
Social and economic impact of the project should be investigated biannually.	As described in Section 3.6, the PP has investigated the social and economic impact of the project, and found that the project is making a positive contribution to sustainable development. DNV confirmed these results during the site visit.

Assessment of f_{NRB} determination

Unless otherwise indicated below, data used for the calculation of f_{NRB} is sourced from the 2010 Forestry Statistics Yearbook, published by the National Institute for the Conservation and Development of Forests, Protected Areas and Wildlife /31/. As this study was published by a government entity, DNV does not doubt the accuracy of the results.

The calculation of f_{NRB} follows the following 5 steps

1. Identify the fuel supply area-

   The fuel supply area is defined as the forest regions of Intibuca, Santa Barbara, Copan and Lempira, all of which are collectively known as the Western Highlands. This is the same supply area as previously approved in the registered PDD of 15 June 2010. As the expansion of the project boundary had not occurred during this monitoring period, DNV can confirm that the boundary is appropriate. The total area within the Western Highlands is 1,658,44 ha /31/.

   Two areas were removed from the fuel supply area in the Western Highlights. First, protected areas within the Western Highlands were removed from the fuel supply area, as these areas are legally off-limits to fuel wood harvesting. In order to be considered Demonstrably Renewable Biomass (DRB), all forestry regulations must be complied with. In the event that fuel wood is being supplied from these areas, it would be in violation of Honduran regulation and the area would therefore be considered as nonrenewable. Eliminating these areas is therefore conservative. 296,319 ha of protected areas were removed from the total area /31/.

   Second, 30% of the forested area that was considered too remote or rugged to be reached for fuel wood collection, as determined by a 2009 study by Ian Cummings and Rob Bailis at the Yale School of Forestry and Environmental Studies /30/, was removed. As the study was conducted by a recognized, independent expert, DNV does not doubt the accuracy of the data. 408,637 ha of unreachable forest area were removed from the total area.

   As a result, the total wood fuel collection area is (1,658,444ha - 296,319ha - 408,637ha =) 953,487 ha.

2. Demonstrate declining carbon stocks –

   According to the 2010 FAO Global Forest Resource Assessment /28/ found that the carbon stocks in living forest biomass in Honduras decreased by 77 million tonnes between 2000 and 2010, a loss representing 18% of the 407 million tonnes. Regionally, a remote sensing analysis of the Santa Barbara region, undertaken in conjunction with the Yale 2009 study /30/, forest cover as a percentage of land cover in the area was shown to

have decreased by 50% between 2003 and 2008. DNV can confirm that carbon stocks have been shown to be declining.

3. Identify and Quantify NRB –
   Woody biomass is considered demonstrably renewable (DRB) if it is originating from forest land areas where /36/:
   a) The land area remains a forest, cropland and/or grasslands, or is reverted to forests
   b) Sustainable management practices are undertaken on these lands to ensure that carbon stocks do not systematically decrease over time
   c) Any national or regional forestry, agriculture and nature conservation regulations are complied with.

   To categories of land were shown to meet the requirement for DRB, areas with improved management plans (43,041 ha) and certified plantations (637 ha) /31/. Total DRB area is therefore 43,678 ha, while NRB in the forest region is (953,487 – 43,678 =) 909,809. The share of NRB in the fuel collection area is therefore 95.42%.
4. Quantify NRB
   In the absence of the project, 465,201 tonnes of wood fuel would be consumed per year /30/. Applying the DRB ratio (4.58%), DRB is 21,307 tonnes. Therefore, NRB is (465,210 – 21,307 =) 443,904 tonnes
5. Calculate f_{NRB}
   In accordance with the applied methodology /36/, f_{NRB} is calculated as follows:
   $f_{NRB} =$ NRB / (NRB + DRB)
   $f_{NRB} = 443,904 / (443,904 + 21,307)$
   $f_{NRB} = 95.4\%$

Although the f_{NRB} value of 95.4% was calculated correctly based on reliable data, both DNV and the PP were of the opinion that an f_{NRB} value of 95.4% is overstated. The previously validated f_{NRB} value was 59%. This value was calculated using credible 3rd-party literature /33/, and following approach described in the Methodology for Improved Cook-stoves and Kitchen Regimes (v.01) /35/:

NRB = H-MAI

Where:

H = the annual harvest of woody biomass, including forest clearance, timber extraction, consumption of wood-fuels, draw from the fuel collection area

MAI = sum of mean annual increments of the wood species, or “re-growth” in the area

NRB = non-renewing biomass, or excess harvest over and above re-growth.

The different NRB results (95.4% and 59%) are the result of different calculation methodologies and different data sources. As both values were obtained using reliable data and accurate calculations, a compromise value of 77% (the average of the two results) was agreed upon.

As described in step 1 above, the f_{NRB} values calculated by the PP are specific to the Western Highlands. This is appropriate for the project boundary that was in place for this monitoring period. However, the expansion of the project boundary to the entire country will be affected in the next monitoring period. Therefore, a FAR was raised requiring the PP to demonstrate a national f_{NRB} value during the next monitoring period, as the project boundary will be expanded.

DNV confirms that the monitoring plan has been properly implemented by the project participant. All parameters stated in the monitoring plan, the cook stove methodology (version 01) and the relevant Gold Standard requirements have been sufficiently monitored and updated as necessary. The table below shows the monitored parameters and the data units used for this monitoring period. As shown in the table, several parameters must be updated if the monitoring KSs suggest that the characteristics of the sales population differ from the characteristics of the KT population. DNV can confirm that the characteristics of the HH sampled for this verification do not differ from the characteristics of the HH sampled for the KT, and therefore a new KT was not required.

Parameters that were verified specifically for this monitoring period include:

Data / Parameter:	**ID 8 / Stove Sales**
Data unit:	Number of stoves
Description:	Identification of household that has received an Estufa Dos por Tres stove.
Measured/Calculated/ Default:	Measured
Source of data:	Installation record database ("Database of Beneficiaries") /19/
Means of Verification	During site visit, DNV reviewed the electronic database, which contains non-editable timestamps indicating when the data was modified. DNV confirmed the installation records through household visits.
Cross-check	NA

Data / Parameter:	**ID 9 / $B_{pj,y}$**
Data unit:	Tonne
Description:	Fuelwood consumed per household per year (This is the mass of woody biomass consumed during cooking in the project in year y in tonnes per year per household by users of the Estufa Dos por Tres stove aged one year or less.)
Measured/Calculated/ Default:	Measured
Source of data:	Biennial Fuelwood Consumption Study (Aging Stove KT) /4/.
Means of Verification	DNV can confirm that the characteristics of the HH sampled for this verification do not differ from the characteristics of the HH sampled for the KT /4/, and therefore a new KT was not required.
Cross-check	N/A

Data / Parameter:	**ID 10/ $EF_{pj,bio,co2}$**
Data unit:	g/MJ
Description:	The CO_2 emission factor for use of the biomass fuel in the project scenario in tonnes CO_2 per tonne of woody biomass fuel.
Measured/Calculated/	Calculated

Default:	
Source of data:	98.3 g/MJ was the emission factor measured in laboratory testing of Estufa Dos por Tres model stoves and used during validation.
Means of Verification	Per Gold Standard Methodology: "If IPCC defaults are not used, testing of EFs of new stoves is only required if there is evidence that the new stove may give rise to significantly different EFs leading to possible over-estimation of emission." This was not the case and therefore DNV did not see the need for a new testing during this verification period.
Cross-check	N/A

Data / Parameter:	**ID 11/ Continued use of stoves over time**
Data unit:	Households
Description:	Drop off rate
Measured/Calculated/ Default:	Measured
Source of data:	Survey and visual observation /4/
Means of Verification	During the site visit, DNV reviewed the results of the surveys conducted by the PP, and can confirm that they were accurately transcribed.
Cross-check	DNV cross-checked these results through observations during HH interviews. The drop off rates observed by DNV were less than the values reported in the PDD. DNV therefore confirms that the reported drop-off rates are acceptable for the monitoring period. /4//1/

Data / Parameter:	**ID 12 / Leakage**
Data unit:	Households
Description:	Assess agreement with statements regarding possible leakage effects, including: a. Rebound Effect b. Stimulation of increased use of a high emission fuel c. Promotion of new stove type stimulates substitution of a cooking fuel or stove type with relatively high emissions d. Loss of space heating causes users to use alternative sources of (and thus, a greater amount of) fuel e. Traditional stoves are reused f. Other types of stoves are present in the household g. Length of time auxiliary stoves are used each day

Measured/Calculated/ Default:	Measured
Source of data:	Ongoing quarterly monitoring questionnaires /20/
Means of Verification	DNV reviewed a sample of the Leakage-Sustainability Surveys /20/ and can confirm that they were accurately transcribed.
Cross-check	DNV cross-checked the survey results through HH interviews conducted during the site visit. The site visit results corroborate the PPs findings.

Data / Parameter:	**ID 13 / Leakage due to Transportation**
Data unit:	Kilometers
Description:	Assess agreement with statement regarding possible leakage effects described in the PDD: "f. Significant emissions from transportation or other suggest more impact than if project did not exist."
Measured/Calculated/ Default:	Measured
Source of data:	Mileage records /25/; Sales Database (for total # of stoves built per year) /19/
Means of Verification	The Gold Standard approved PDD and the First Monitoring Report were both approved assuming 0 leakage due to transportation. This was done by determining the total number of stoves constructed / total miles driven. It was approved that this 15.61% ratio would serve as the baseline for further monitoring of leakage due to transportation. For this monitoring period, this ratio was found to be even lower, or 10.16% and was confirmed by DNV through the review of documents /15/. Based on this reduced ratio, the PP is also reporting 0 leakage emissions for the Third Monitoring period, as a total of 168,541 Km driven represents <1% of the total ER, and hence can be considered *de minimis* per the Gold Standard methodology. DNV reviewed the data and calculations, and can confirm the results are accurately stated.
Cross-check	N/A

3.5 Assessment of data and calculation of emission reductions

The PP submitted all the necessary data and parameters required to be monitored to DNV along with the monitoring report. All the parameters required to be monitored as per the revised PDD

have been monitored and reported in the monitoring report. DNV reviewed the calculation worksheet **/11/**//26/ for the emission reduction calculation for the monitoring period 01 December 2011 to 30 November 2012. DNV confirms that the formulas, conversions, aggregations and factors are consistent with the monitoring plan in the PDD. The reported data was checked as follows:

- All the necessary data and all the parameters required to be monitored in the revised PDD **/1/** were reviewed to ensure accuracy;
- The Project Sales Database maintained by Proyecto Mirador /19/was reviewed to confirm the number of stoves sold during the monitoring period.

Emission Reductions

In accordance with the applied methodology, annual emission reductions are calculated as follows:

$$ERy = \sum_y BEi,y - \sum_y PEi,y - \sum_y LEi,y$$

Where:

ER_y = Total emission reductions in year y (tCO_2e/yr)

$BE_{i,y}$ = Baseline emissions of cluster I in year y (tCO_2e/yr)

$PE_{i,y}$ = Project emissions of cluster I in year y (tCO_2e/yr)

$LE_{i,y}$ = Leakage of cluster I in year y (tCO_2e/yr)

In June 2010, Proyecto Mirador completed a paired sample, n=55 quantitative Fuel wood Consumption Study (July-September 2010) /12//13/ indicating that each stove reduces GHG emissions by 4.05 tonnes CO_2e /year. Accounting for the updated f_{NRB} of 77%, the emission reductions claimed per stove during this monitoring period are 3.31 tonnes CO_2e/year.

Total emission reductions are based on the final total of 17 000 stoves built during this monitoring Period. The value of 78 023 tCO_2 is calculated on a monthly basis, not an annual average. The stoves in operation by month were reduced by the drop-off rates of 4%, 5% and 13% for years 1, 2 and 3 respectively, based on the developer's drop-off surveys /8/. The emissions reductions were then further reduced to account for an efficiency reduction of 6% in the second and third year of operation ("degradation rate"), a conservative estimate relative to the Aging stove KTs conducted during this verification period /9//10/. Correspondingly, the calculation of the emission reductions for stoves in operation for 12 months or less utilizes 3.12 tCO_2e/year, as set forth in the Financing Plan /11/ and also described above. A more detailed summary of the calculations used to arrive at the emissions reductions is summarized in appendix B of this report.

DNV reviewed the spreadsheets provided by the PP /11//26/ and is able to confirm that the calculation of emission reductions for the appropriate technology has been conducted properly, and that all parameter values have been correctly input into the spreadsheet. Thus, DNV can confirm that the final calculation of emission reductions as stated in the monitoring report is correct. The emission reductions from the project during the period 01 December 2011 to 30 November 2012 amount to 78 023 tonnes of CO_2 equivalent. Of this total, 4 688 tonnes of CO_2 equivalent were generated in 2011, and 73 335 tonnes of CO_2 equivalent were generated in 2012.

3.6 Monitoring of Gold Standard Sustainability Indicators

Additional parameters monitored are in accordance with the monitoring plan for sustainability indicators, as per the requirements stated in the Gold Standard Passport (June 2010) and the monitoring report (Version 04) dated 11 February 2013.

Indicator	Monitoring Source	Variables, Units and Frequency of Measurements	DNV Assessment
Air quality	Monitoring Survey	Measurement of user perceptions between old stove and new stove: Perceived smoke levels, Incidence of coughing, Incidence of respiratory illness, Incidence of itchy eyes.	DNV confirmed the positive assessment of this indicator through the review of the results of the PP's monitoring survey results /20/ and through a subsequent cross check. During the site visit, HH were asked to describe any benefits (aside from time or financial savings) associated with use of stove. Over 95% of HH who received project stoves reported reductions in smoke and better air quality in their homes.
Livelihood of the poor	Monitoring Survey	Time and money savings due to reduced fuel consumption and time spent cooking.	DNV confirmed the positive assessment of this indicator through the review of the results of the PP's monitoring survey results /20/ and through a subsequent cross check. All HHs interviewed reported time and money savings as a result of the project technology.
Access to affordable and clean energy services	Monitoring Survey, Sales Database	Time and money savings due to reduced fuel consumption.	DNV confirmed the positive assessment of this indicator through the review of the results of the PP's monitoring survey results /20/ and through a subsequent cross check. All HHs interviewed reported time and money savings as a result of the project technology.
Quality of Employment	Monitoring Survey	Quality and numbers of jobs direct and indirect.	DNV confirmed the positive assessment of this indicator through the review of the

			results of the PP's monitoring survey results /21//22/ and through a subsequent cross check. DNV formally interviewed 4 employees and can confirm the positive results present in the employee satisfaction questionnaire reported by the PP.
Human and Institutional Capacity	Monitoring Survey	Place	DNV confirmed the positive assessment of this indicator through the review of the results of the PP's monitoring survey results /20/ and through a subsequent cross check. During the site visit, 100% of HH interviewed who received stoves reported time and money savings as a result of the project technology. Monetary savings were reported to be between 50-90 percent. Time saved also allowed project beneficiaries to dedicate to other activities around the home or for additional income.
Quantitative Employment and Income Generation	Project, Salary records	Jobs created, salaries executed	DNV confirmed the positive assessment of this indicator through the review of the results of the PP's monitoring survey results /23/ and through a subsequent cross check. Salary and employment records were verified through on-site employee interviews.

3.7 Management system and quality assurance

The project's management system was reviewed to determine the effectiveness of its implementation. In accordance with the revised PDD dated 11 February 2013, the monitoring plan has clearly prescribed the management and operational procedures for monitoring, recording, data management, and training. DNV has verified through document reviews and site

visit interviews the management system and quality assurance procedures and has found them to be appropriate and effective.

4 VERIFICATION STATEMENT

DNV Climate Change Services AS (DNV) has performed the verification of the emission reductions that have been reported for the "Enhanced Distribution of Efficient Cook Stoves in Honduras Project" (Gold Standard Registration Reference No.GS690) for the period 01 December 2011 to 30 November 2012.

The project participants are responsible for the collection of data in accordance with the monitoring plan and the reporting of GHG emissions reductions from the project.

It is DNV's responsibility to express an independent verification statement on the reported GHG emission reductions from the project.

DNV conducted the verification on the basis of the GS approved monitoring methodology "Methodology for Improved Cook-stoves and Kitchen Regimes V.01", the monitoring plan contained in the revised Project Design Document of 11 February 2013 and the monitoring report (Version 04) dated 11 February 2013. The verification consisted of checking whether the provisions of the monitoring methodology and the monitoring plan were consistently and appropriately applied and the collection of evidence to support the data reported in the monitoring report.

DNV's verification approach draws on an understanding of the risks associated with reporting of GHG emission data and the controls in place to mitigate these. DNV planned and performed the verification by obtaining evidence and other information and explanations that DNV considers necessary to give reasonable assurance that reported GHG emission reductions are fairly stated.

In our opinion the GHG emissions reductions of the "Enhanced Distribution of Efficient Cook Stoves in Honduras Project" (Gold Standard Registration Reference No.GS690) for the period 01 December 2011 to 30 November 2012 are fairly stated in the monitoring report (Version 04) dated 11 February 2013.

The GHG emission reductions were calculated correctly on the basis of the approved baseline and monitoring methodology GS approved monitoring methodology "Methodology for Improved Cook-stoves and Kitchen Regimes V.01", the monitoring plan contained in the revised Project Design Document of 11 February 2013 and the monitoring report (Version 04) dated 11 February 2013.

DNV Climate Change Services AS is able to certify that the emission reductions from the "Enhanced Distribution of Efficient Cook Stoves in Honduras Project" during the period 01 December 2011 to 30 November 2012 amount to 78 023 tonnes of CO_2 equivalent. Of this total, 4 688 tonnes of CO_2 equivalent were generated in 2011, and 73 335 tonnes of CO_2 equivalent were generated in 2012.

5 REFERENCES

The following table outlines the documentation assessed during the verification:

/1/ Proyecto Mirador: Project Design Document - "Enhanced distribution of efficient wood stoves in Honduras", version 05 dated 11 February 2013.

/2/ Proyecto Mirador: Project Design Document - "Enhanced distribution of efficient wood stoves in Honduras", version 04 dated 15 June 2010. This previously registered version is replaced by version 05 above.

/3/ Proyecto Mirador, Monitoring Report - "Enhanced distribution of efficient wood stoves in Honduras", Version 04 dated 11 February 2013, and previous versions.

/4/ Proyecto Mirador, Drop-off Summary 2011.

/5/ Proyecto Mirador, Design Change Request (boundary expansion), 22 May 2012

/6/ Proyecto Mirador, Design Change Request (f_{NRB}), 22 May 2012

/7/ Gold Standard, Review for Approval of Design Change, 26 September 2012

/8/ Proyecto Mirador, Drop-off Summary 2012.

/9/ Yale University, Aging Stove KT Report. 2012. Professor Robert Bailis.

/10/ Yale University, Aging Stove KT 2012 Raw Data.

/11/ Proyecto Mirador, Financing Plan. (spreadsheet used to calculate net stoves in operation during monitoring period)

/12/ Yale University, PM Fuel Usage Study Data, 2010.

/13/ Yale University, PM Fuel Usage Study Summary Report, 2010

/14/ Yale University, PM Fuel Usage Study Data Sheet (Spanish) 2010

/15/ Yale University, PM Fuel Usage Study Sheet (English) 2010

/16/ Yale University, PM Fuel Usage Study Guidelines 2010

/17/ Proyecto Mirador, Leakage-Sustainability Survey (Spanish)

/18/ Proyecto Mirador, Leakage-Sustainability Survey (English)

/19/ Proyecto Mirador, Sales Record. Stove Installation Database

/20/ Proyecto Mirador, Leakage-Sustainability Results 2011. Results and Summary Totals (12/11-11/12)

/21/ Proyecto Mirador, Employee Questionnaire Summary 2011.

/22/ Proyecto Mirador, Employee Questionnaire (Spanish and English)

/23/ Proyecto Mirador, Quantitative Employment Report. (Nov. 2012)

/24/ Proyecto Mirador, Training Brochure.

/25/ Proyecto Mirador, Transportation Summary, 2012.

/26/ Proyecto Mirador, ER Calculations, 2012.

/27/ Proyecto Mirador, Kitchen Surveys – New Territory summary, 8 January 2012

/28/ Food and Agriculture Organization (FAO), 2010 Global Forest Resource Assessment, United Nations.

/29/ National Institute of Forest Conservation and Development, Protected Areas and Wildlife, 2010 Annual Forestry Statistics.

/30/ Cummins, I., 2009, The Patterns and Processes of Land Use Change in Honduras, Yale School of Forestry.

/31/ National Institute for the Conservation and Development of Forests, Protected Areas and Wildlife, Forestry Statistics Yearbook, 2010

/32/ EnviroFit International, "Improved Cook-stoves Program in Honduras "Vida Mejor con Ecofogones de Alto Rendimiento", available at: http://cdm.unfccc.int/ProgrammeOfActivities/Validation/DB/4FZ8ITDUBGUEU7F7C23V5BLRE2TW2M/view.html

/33/ Data sources for the previous fNRB calculation:

- Cummins, Ian and Rob Bailis, The patterns and processes of land use change in Honduras, Yale School of Forestry and Environmental Studies, 2009
- Yale School of Forestry and Environmental Studies, Kitchen surveys, 2007
- Ghilardi, A., Guerrero, G., and O. Masera, A GIS-based methodology for highlighting fuel wood supply/demand imbalances at the local level: a case study for Central Mexico. Biomass and Bioenergy 2009 Vol. 33 No. 6/7 pp. 957-972
- Instituto Nacional de Estadistica, Honduras 2005-06 DHS Final Report, December 2006

Background documentation reviewed:

/34/ Gold Standard Foundation, Gold Standard, version 2.1

/35/ Gold Standard Foundation, "Methodology for Improved Cook-Stoves and Kitchen Regimes," Version 01,", V.01, May 2010

/36/ Gold Standard Foundation, "Technologies and Practices to Displace Decentralized Thermal Energy Consumption", 11/04/2011

/37/ IPCC: 2006 IPCC Guidelines for National Greenhouse Gas Inventories

/38/ Proyecto Mirador Gold Standard Passport - "Enhanced distribution of efficient wood stoves in Honduras", June 2010.

/39/ Proyecto Mirador "Gold Standard Local Stakeholder Consultation Report for Enhanced distribution of efficient wood stoves in Honduras", Dec 18, 2008.

/40/ SGS Climate Change Programme, Gold Standard Validation Report: "Enhanced distribution of efficient wood stoves in Honduras", Jan 14, 2010, ver. 3.

/41/ SGS Climate Change Programme Gold Standard Verification Report: "Enhanced distribution of efficient wood stoves in Honduras", Feb 23, 2010.

/42/ DNV Climate Change Services AS, Gold Standard Verification Report: "Enhanced distribution of efficient wood stoves in Honduras", Feb 16, 2012.

APPENDIX A

CORRECTIVE ACTION REQUESTS, CLARIFICATION REQUESTS AND FORWARD ACTION REQUESTS

Table A-1 Forward Action Requests (FARS) Raised by the Gold Standard Review of the Previous Verification

Description	Summary of project owner response	Verification team conclusion
FAR 1 PP shall note that aging factor for each stove age group is required during verification if GSVERs are requested for these age groups of stove. For this monitoring period, aging factor of 6% for age group 2-3 is accepted but if future tests on age group 2-3 show higher aging factor then excess emission reductions of this monitoring period may have to be adjusted from future monitoring periods.	An aging stove KT was conducted for stoves in their 2nd-3rd year by Professor Rob Bailis. This 2012 Aging Stove KT confirmed further degradation between 2011 and 2012 to be statistically insignificant (see "ANNEX 2: "A02_Aging Stove KT Report 2012.pdf" and ANNEX 3: "A03_Aging Stove KT 2012 Raw Data.xlsx"). However, to maintain conservativeness, we are reporting 6% stove degradation rates for the Third Verification, for both Year 2 and Year 3 stoves.	DNV reviewed the Aging Stove KT for age group 2-3 year stoves. This analysis found no statistically significant degradation between 2011 and 2012. Therefore, the 6% degradation rate used in the previous verification is conservative and there were no excess emission reductions claimed. This FAR is closed.
FAR 2 PP shall please note that drop-off rates for each age group of stove verified should be available during future verifications and monitored rates should be applied in calculations	Drop-off rates were monitored via surveys conducted in 2012 (see attached ANNEX 1: "A01_Dropoff Summary 2012") .	The PP included a usage survey as part of the quarterly monitoring during this monitoring period to understand the drop-off rate in HH stove usage over time **/8/**. DNV reviewed the surveys and cross-checked the results during the site visit and can confirm that the drop-off rates are accurately stated. This FAR is Closed

Table A-2 Forward Action Requests (FARS) Raised During Previous Verification

Description	Summary of project owner response	Verification team conclusion
FAR 1 No operational procedures in electronic or hardcopy versions were found during the verification process. Project participant should have written operational procedures applicable to the project activity in order to make sure that all proceedings are always applied identically.	The attached EXHIBIT 1: "E01_Administrative Manual 2012.docx" was drafted to fulfill the requirement. Since it was drafted, Proyecto Mirador has hired a Director of Finance and a Director of Training & Human Resources who will work together over the coming months to develop and refine the manual.	DNV reviewed the Administrative Manual during the site visit, which provides the operational procedures for the project activity, and can confirm that it is sufficient to close the FAR. FAR 1 is closed.
FAR 2 No records of staff training were found during the verification process. Project participant should have records for keeping track of qualification skills and dates.	Staff training records are kept on file in the Proyecto Mirador office in Honduras and will be made available to DNV for review during the Site Visit.	During the site visit, the PP provided records of all staff trainings. These records included the date of training, topics covered, trainers and the attendees. DNV can confirm that this is sufficient to close the FAR. FAR 2 is Closed

Table A-3 Corrective Action Requests

Draft report corrective action requests by verification team	Summary of project owner response	Verification team conclusion
No CARs have been identified		

Table A-4 Clarification Requests

Draft report clarifications requests by verification team	Summary of project owner response	Verification team conclusion
CL 1. Proyecto Mirador was granted approval by the Gold Standard to expand the geographical boundary of the project to include all of Honduras. In order to show that the existing baseline scenario is appropriate for the expanded region, the Gold Standard requires PM to conduct qualitative Kitchen Surveys in each new province. The PDD states that "PM is in process of conducting simple Kitchen Surveys on random households that do not have the 2x3 cook stove, including at least 10 surveys within each of the new Departments in our expanded project area." PM shall: a. provide justification for the sample size of 10 surveys per department, and b. describe how the households were selected for the KS.	a. We have increased our KS sample size to 100 (25 surveys in each department) b. PM has a sizeable backlog of "Solicitudes," or requests for construction submitted by village leaders, each of which includes a list of homes that have requested stoves. Representative villages were chosen from each Department and households were randomly selected from the construction lists on the corresponding "Solicitud."	a. The revised KS sample size is in line with the requirements of the applied methodology b. The clarification is sufficient to close the CL. CL 1 is closed
CL 2. Several documents were not finalized at the start of verification. PM is requested to provide the following : - Results of Kitchen Surveys, and hardcopies of	*Results of Kitchen Surveys* ANNEX 15: "A15_KS New Territory.xlsx" (as referenced in the Monitoring Report) is attached hereto.	The PP has provided DNV with the requested documentation. DNV has reviewed this documentation and can confirm that the calculations are accurate and that data and results are

survey results (prior to site visit) - Total Sales Database (prior to site visit) - Updated emission reduction spreadsheet (when available), and - Updated monitoring report (when available).	*Total Sales Database* Numbers will be verified on December 1 and 2; final stove database to be submitted December 3. *Updated ER Spreadsheet* Financing Plan to be revised and submitted December 3 upon finalization of stove numbers. *Updated Monitoring Report* Update of Monitoring Report to be completed December 3 following entry of final stove numbers to Financing Plan.	consistently reported. CL 2 is Closed
CL 3 PM shall document the Community Meetings organized in each targeted village during the monitoring period, and the feedback received during these meetings.	Each Ejecutor has compiled a report summarizing comments received from stakeholders and addressed by PM at Community Meetings throughout the 3rd Verification Period. These reports are compiled and attached as EXHIBIT 2: "E02_Stakeholder Comment Reports.pdf" and also include several written documents compiled from stakeholders.	DNV has reviewed the stakeholder comment reports, which provide a summary of stakeholder comments & feedback received during the meetings. CL 3 is closed.
CL 4 PM shall provide evidence that GS NGO's have been informed of the design change.	Fundación MDL is the only Gold Standard NGO in Honduras according to the attached EXHIBIT 3: "E03_GS NGO List.xlsx," downloaded directly from the Gold Standard website and sorted by country. Proof of notification by e-mail	The PP has provided DNV with proof of notification of the GS NGO within the Honduras. CL 4 is closed.

	and web inquiry is attached as EXHIBIT 4: "E04_GS NGO Notification.pdf."	

Table A-5 Forward Action Requests (FARS) Raised During This Verification

Description	Summary of project owner response
FAR 1 The fNRB value of 77% relies on data that is specific to the Western Highlands. This is appropriate for the current project boundary, and therefore is acceptable for this monitoring period. The project boundary will be expanded in the next monitoring period. PP must determine an fNRB value that is appropriate for the expanded boundary.	Proyecto Mirador accepts the FAR and will revise the f_{NRB} value in the next monitoring period.

APPENDIX B

REVIEW OF EMISSION REDUCTION CALCULATION

For reference, the following subscripts are common to all calculations:

- Bl=baseline
- Inst.=institutional stove
- Y=year

Baseline emissions

$BE_{hh,y} = k_{hh,y,c,i} * [S_{hh,y,i} * [(X_{nrb,y} * (B_{bl,hh,y,} * EF_{wood,CO2} * NCV_{wood})$
$+ \Sigma(\text{Non-}CO_2 \text{ emissions during cooking})$
$+ \Sigma(\text{GHG emissions during production of the fuels})]]$

Where

$BE_{hh,y}$ = Baseline emissions in year y in ton CO_2e per year specific and unit chosen (t CO_2e)

$k_{hh,y,i}$ = Total number of project stoves distributed to households in year y

$X_{nrb,y}$ = Non-renewable fraction of the woody biomass harvested in the project collection area in year y

$S_{hh,y,i}$ = Fraction of sales of HH stove i in year y.

$B_{bl,hh,y,}$ = Mass of wood fuel consumed during cooking in the baseline in year y (kg/day).

$EF_{wood,co2}$ = CO_2 emission factor in ton CO_2 per ton fuel for wood fuel (t CO_2/tFuel)

NCV_{wood} = Net calorific value of wood (TJ/Gg)

Non-CO_2 emissions during cooking
$= \Sigma(B_{bl,hh,y,} * EF_{wood,non\text{-}co2})$

Where

$EF_{wood,non\text{-}co2}$ = Non-CO_2 (CH_4, N_20) emission factor during cooking for wood fuel in ton gas per ton fuel

Project Emissions Equations

$PE_{hh,y} = k_{hh,y,i} * [S_{hh,y,i} * AU_{hh,y,i} * [(X_{nrb,y} * (B_{pj,hh,y,i} * EF_{wood,CO2} * NCV_{wood})$
$+ \Sigma(\text{Non-}CO_2 \text{ emissions during cooking})$
$+ \Sigma(\text{GHG emissions during production of the fuels})]]$

Where (parameters common to the baseline equation are not repeated):

$PE_{hh,y}$ = Project emissions in ton CO_2e per year in year y and unit chosen (tCO_2e)

$AU_{hh,y,I}$ = Annual usage of HH stove technology i in year y (percent)

$B_{pj,hh,y,}$ = the mass of wood fuel consumed during cooking in the project each year (kg/day).

Non-CO_2 emissions during cooking
= $\Sigma(B_{pj,hh,y,c,i} * EF_{wood,non\text{-}co2})$