Gold standard for the global goals
Monitoring report

June 2017, version 1

Title of the project	GS1729 Myanmar Stoves Campaign - Soneva in Myanmar – VPA No. 009
Gold Standard project id	GS ID of the Activity (VPA 009) = GS 6599
Version number of the monitoring report	V 2.0 (on 24th April 2019) V 1.0 (on 11th March 2019)
Completion date of the monitoring report	V 1.0 (on 11th March 2019)
Date of project design certification	06/12/2018
Start date of crediting period	01st February 2018
Duration of this monitoring period	01/02/2018 - 31/01/2019
Duration of previous monitoring period	N.A.
Project representative(s)	Soneva Foundation
Host Country	Republic of the Union of Myanmar
Certification pathway (activity certification/impact certification)	Impact Certification
SDG Contributions targeted (as per approved PDD)	1 – SDG 3: Ensure healthy lives and promote well-being for all at all ages 2 – SDG 7: Ensure access to affordable, reliable, sustainable and modern energy for all 3 – SDG 8: Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all 4 - SDG 13: Take urgent action to combat climate change and its impacts
Gold Standard statement/product certification sought (GSVER/ADALYs/RECs etc.)	GSVER
Selected methodology(ies)	The Gold Standard Simplified Methodology for Efficient Cookstoves, Version 01, February 2013.

Estimated amount of annual average certified SDG impact (as per approved PDD)	SDG 3: Ensure healthy lives and promote well-being for all of all ages This VPA alone serves 1639 households in total but 1603 out of them are eligible and these stoves have improved the health and safety of around 7742 people due to the fuel-efficient cookstove (Average HH size of 4.83 * 1603 HHs). This is in line with the Target 3.9.1, which states to reduce the number of mortality rate attributed to household and ambient air pollution SDG 7: Ensure access to affordable, reliable, sustainable and modern energy for all This VPA has brought fuel-efficient cookstove to 1603 households, thus improving the energy efficiency for their cooking practices as compared to the old, three-stone fires, in line with the Target 7.3, which states, By 2030, double the global rate of improvement in energy efficiency. It also covers the Target 7.b, which focuses on bringing technology to LDCs SDG 8: Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all Myanmar Stoves Campaign's project design includes selecting, training and developing the local men and women for the role of sale agents, for distribution and selling of stoves to the households. This provides these local entrepreneurs with transferable skills and income source. This is in line with the Target 8.3.1, which states, to increase the Proportion of informal employment in non-agriculture employment, by sex. Between the start and end time of this VPA, a total of 64 Local Sale Agents were trained, out of which 51 were women and 13 men (Source: VPA 009 - Project Tracking File) SDG 13: Take urgent action to combat climate change and its impacts The average annual VERs generated by this VPA are an estimated 8526 VERs per year for five years. In addition to this, in line with Target 13.3, states, to improve education, awareness-raising and human and institutional capacity on climate change mitigation, adaptation, impact reduction and early warning. During this VPA period, The Myanmar Stoves Campaign has conducted 60 such village level awareness raising events which were attended by a total of 1775 participants, 1163 of which were women and 612 men. (Source: VPA 009 - Project Tracking File) The project, as per Target 13.b.1, also uses the carbon finance to support technology and capacity building for mechanisms for raising capacities for effective climate change-related planning and management, including focusing on women, youth and local and marginalized communities

Total amount of certified SDG impact (as per approved methodology) achieved in this monitoring period	SDG 3: Ensure healthy lives and promote well-being for all of all ages This VPA alone serves 1639 households of which 1603 are applied for crediting and with the usage rate of 100% all 1603 stoves are in use and has improved the health and safety of around 7742 people due to the fuel-efficient cookstove. This is in line with the Target 3.9.1, which states to reduce the number of mortality rate attributed to household and ambient air pollution SDG 7: Ensure access to affordable, reliable, sustainable and modern energy for all This VPA has brought fuel-efficient cookstove, thus improving the energy efficiency for their cooking practices as compared to the old, three-stone fires, in line with the Target 7.3, which states, By 2030, double the global rate of improvement in energy efficiency. It also covers the Target 7.b, which focuses on bringing technology to LDCs SDG 8: Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all Myanmar Stoves Campaign's project design includes selecting, training and developing the local men and women for the role of sale agents, for distribution and selling of stoves to the households. This provides these local entrepreneurs with transferable skills and income source. This is in line with the Target 8.3.1, which states, to increase the Proportion of informal employment in non-agriculture employment, by sex. During the start and end of the stove distribution period in this VPA, 64 such jobs were created, from which 51 are by women. SDG 13: Take urgent action to combat climate change and its impacts During the first issuance, this VPA generated 8626 VERs In addition to this, in line with Target 13.3, states, to improve education, awareness-raising and human and institutional capacity on climate change mitigation, adaptation, impact reduction and early warning. The Myanmar Stoves Campaign has during this VPA period, conducted 60 such village level awareness raising events which were attended by a total of 1775 participants, where 1163 were women. The project, as per Target 13.b.1, also uses the carbon finance to support technology and capacity building for mechanisms for raising capacities for effective climate change-related planning and management, including focusing on women, youth and local and marginalized communities

SECTION A. Description of project

A.1. Purpose and general description of project

>> (Provide a brief summary of the detailed description given in section B.1 including purpose of the project, brief description of the installed technology and equipment and relevant dates for the project (e.g. construction start/end, commissioning, continued operation periods, etc.)

Myanmar Stoves Campaign aims to ensure the use of carbon finance to support the distribution and maintenance of domestic and non-domestic Fuel-Efficient Stoves (FES) through local implementation partner(s) (IP) in the Republic of the Union of Myanmar.

The Myanmar Stoves Campaign is a programme of the Soneva Foundation and the first Gold Standard certified carbon project in Myanmar. This project activity is implemented by three actors, which are the Soneva Foundation, Mercy Corps and Local Vendors (Sales Agents) in each of the targeted project villages under this VPA.

Myanmar Stoves Campaign was started in September 2013 and currently, and since then, as of March 2019, the project has covered more than 1000 villages in Mandalay Region in central part of Myanmar. The co-ordinated action by the three actors in this project has been successful in distributing over 25,000 fuel efficient stoves which have improved the lives of more than 125,000 people.

The stoves distributed are the Envirofit SuperSaver GL (Earlier known as M-5000). Each household received at least one stove. There are two methods of payments which are lump sum (15000 MMK for lump sum payment) and instalment (Total of 17000 MMK distributed over for five (5) months instalment) payments. Instalment is an excellent method for some families who have financial hardship and couldn't afford lump sum payment.

Selected FES model for this VPA:

- Envirofit SuperSaver GL (Earlier known as M-5000), launched in 2011, is the successor model of the G-3300 and is produced in China, India and Kenya
- Product weight 4.2kg
- Size (in cm): 28x26.5x26.5
- CO2 emission reduction compared to three stone fire of 66%
- Wood use reduction compared to three stone fire of 66%
- Thermal efficiency of 29.7%
- Manufacturer guarantee of 2 years on outside and 5 years on the inside parts
- Estimated product life of 5 years

Source: M5000 (SuperSaver GL) Performance Sheet (Link) and manufacturer website (Link)

Envirofit SuperSaver GL had been selected as suitable product for local users based on the inputs from local communities and various stakeholders after they were consulted through demonstration and filed tests. This followed with the stoves being distributed to the households in targeted villages.

This intervention has helped the local households to smoothly transition to a new FES stove from being dependent on the old three stone fires. The user experience and benefits has been very positive and encouraging towards this modern technology. In addition to this, this project has successfully demonstrated the contribution in catalysing the socio-economic development of these communities by having a positive impact on a range of indicators. There is an increasing awareness among the users in targeted villages and the nearby ones on the immediate and long term environmental and economic benefits coming from this project, which is helping in higher rates of adoption, all of which is helping the Myanmar Stoves Campaign to positively impact the lives of the rural under-served in a sustainable and environmentally friendly way.

This VPA consist of 1603 stoves eligible for crediting (1639 in total).

Out of 1639 in total , the following stoves were taken out from applying for verification:
i) Charcoal as Baseline Fuel = 36

After deducting the stoves using charcoal as a baseline fuel, 1603 stoves were selected for crediting out of 1639 stoves considered originally.

Date of first stove sale & start date of the project activity = 01st December 2017 (to 22nd January 2018)

Start date of crediting period = 01st February 2018

First project monitoring exercise performed on: 05th February 2019 to 11th February 2019, results to be applied to the crediting periods from:
01/02/2018 - 31/01/2019

A.2. Location of project

>> *(Provide host country, state/province, city/town details along with GPS co-ordinates.)*

Republic of the Union of Myanmar, Mandalay Division, Pyabwe Region.

The geographic location of the project activity is 20°33'07.28N and 95°47'51.08E. Stoves distributed under VPA – 009 are majorly in the villages of, which are clearly identifiable and can be distinguished from the other VPAs.

List of Villages (Major, Not All) Included in the VPA 009					
Sar Taing	Shin Hla South	Ywar Lin	Hlay Wun	Pauk Taw	Nat Gyi Sin
Min Kaing	Shin Hla Middle	Be Seik	Let Pan Ngu	No (11) Ward	Nat Gyi Sin
Ywar Thar Yar	Ywar Lin	Bu Kyun (East)	Sit Say Chaung	Tar Myauk	Aye Kyun
Ma Gyi Kan	Pwe Sar Kone	Bu Kyun (North)	Thar Poe	War Yon Khon	Auk Inn
Sa Khan Kan	Po Wa (North)	Bu Kyun (South)	Thin Ga Ton	Hin Thar Kone	Mar Ya Bin
Mar Ya Bin	Sa Kyin	Htein Chaung	Nwar Chan Kone	Hin Thar Ywar Thit	Taw Pu
Thin Ga Ton	Kauk Yoe Pon	Hpa Ye Kyun	Myit Laung	Ma Yoe Kone	Ywar Tan Shey

A.3. Reference of applied methodology

>>*(Indicate title and version number of the methodology.)*

The Gold Standard Simplified Methodology for Efficient Cookstoves, Version 01, February 2013.

A.4. Crediting period of project

>> (*Provide start date and length of the crediting period as given in approved PDD.)*

Date of first stove sale & start date of the project activity = 01st December 2017 (to 22nd January2018)
Start date of crediting period = 01st February 2018
End date of the crediting period = 31st January 2019

SECTION B. Implementation of project

B.1. Description of implemented project

>> (Provide information on the implementation status of the project during this monitoring period. Specify any deviations / delays compared to information in approved project.)

The project is implemented and is currently under annual monitoring.

B.2. Post-registration changes

B.2.1. Temporary deviations from Certified Key Project Information, Project Design Document, Monitoring & Reporting Plan, applied methodology or applied standardized baseline

>> (Indicate whether any temporary deviations have been applied during this monitoring period. If applied, provide a description of the deviation(s). Include the reasons for the deviation(s), how it deviates from the monitoring plan, applied methodology(ies) and/or applied approaches, the duration for which the deviation(s) is(are) applicable and justification on the conservativeness of the approach. Also indicate if prior approval from GS-TAC have been sought on the deviation.)

The number of households in this VPA has been changed from 1639 considered earlier in the design document during the validation phase, to 1603 as total households.

Out of 1639 in total , the following stoves were taken out from applying for verification:
i) Charcoal as Baseline Fuel = 36

After deducting the stoves using charcoal as a baseline fuel, 1603 stoves were selected for crediting out of 1639 stoves considered originally.

B.2.2. Corrections

>> (Indicate whether any corrections to project information or parameters fixed at validation have been applied.)

i) Same as B.2.1

B.2.3. Changes to start date of crediting period

>> (Indicate whether any changes to the start date of the crediting period have been approved by Gold Standard that is relevant for this monitoring period.)

N.A.

B.2.4. Permanent changes from registered monitoring plan, applied methodology or applied standardized baseline

>> (Indicate whether any permanent changes from the approved monitoring plan, applied methodologies or applied approaches have been approved by GS-TAC that is relevant for this monitoring period.)

N.A.

B.2.5. Changes to project design of approved project

>> (Indicate whether any changes to the design of the project have been approved by GS-TAC that is relevant for this monitoring period.)

N.A.

SECTION C. Description of monitoring system applied by the project

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The monitoring plan is in accordance with " The Gold Standard Simplified Methodology for Efficient Cookstoves, Version 01, February 2013."

The monitoring methodology is supported by:

- Sales receipts
- Total Sales Record (Project Tracking File)
- Customer Database
- Project Database, which is maintained continuously

Maintenance of a Total Sales Record

The Project Proponent collates and maintains the total sales data in electronic and paper format. The Total Sales Record will comprise the following data:

- Date of Sale[1]
- Model/type of project technology sold:
- Serial/ID number of the device
- Name and telephone number (if available) of end-users
- Application of device (type of end use: Commercial/Domestic)
- Address/ Location of end-users[2]

The Sales Record information is collected using the following methods:
For the portable fuel-efficient stoves, the local vendors (sales agents) sell stoves directly to end-users and record sales and user training continuously. This data is then collated into a detailed Total Sales Record that tracks the chain of transactions between the user and the distributors.

The data received by the project implementation partners in paper format will be converted and saved electronically for monitoring and analysis purposes. A mechanism, designed jointly between the CME and the implementing partner, is agreed and put in place to accurately track sales, inventories, supply and purchases for every stove distributed. For assuring accuracy and consistency, the Total Sales Record will be cross checked with import data, usage and other relevant data.

The names and telephone numbers or name and addresses collected must be commensurate with representative sampling, i.e. the names and addresses or phone numbers (where possible) within sales record shall be large enough so that surveys can be based on representative, randomly selected samples.

Project Database

The project database is derived from the Total Sales Record with project cookstoves differentiated by different project scenarios. The differentiation of the project database into sections is based on the results of the applicable monitoring studies for each project scenario, in order that emission reduction calculations can be conducted appropriately section by section.

Other periodic monitoring tasks

Monitoring shall consist of checking of a representative sample, once every year (annually) to ensure that project cookstoves are still operating by carrying out the usage survey as per the guidelines set out in the methodology.

[1] Date of Sale will be associated with conservative assessment as to date of installation and commencement of use of technology

[2] In circumstances where a user's formal address cannot be provided due to insufficient information on street names/house numbers, suitable landmarks/ with location on a town/city plan will be provided.

Annual surveys for monitoring:

- Usage Survey to establish the drop-off rates in technology usage from year-1 sales and other vintages. For example, if only cookstoves in the first year of use (age0-1) are being credited, a usage parameter must be established for age-group 0-1, through a usage survey for cookstove age0-1. If cookstoves of age 0-1 and age 1-2 are being credited (as part of first request for issuance), usage parameters must be established for age-group 0-1 and 1-2, respectively through a usage survey. If cookstoves of age-group 0-1 and 1-2 are being credited (as part of second request for issuance), usage parameters must be established for age-group 1-2 only through a usage survey as the usage rate for cookstoves of age group 0-1 can be applied from the previous issuance.

- Monitoring Survey to reassess household kitchen regimes. CME and/or Implementation Partner will randomly sample households from the sales agreements received. Sampling will be representative of geographic regions and technology used. Where replacements are made, monitoring shall also ensure that the efficiency of the new cookstove is similar to the appliances being replaced. Finally, the project must also monitor the physical conditions of the cookstoves.

SECTION D. Data and parameters

D.1. Data and parameters fixed ex ante or at renewal of crediting period

(Copy this table for each piece of data and parameter)

Relevant SDG Indicator	SDG 13: Take urgent action to combat climate change and its impacts
Data/parameter	**$EF_{b,fuel,CO2}$**
Unit	tCO2/t firewood
Description	CO2 emission factor arising from the use of firewood in baseline scenario
Source of data	IPCC default values, table 1.4 of chapter 1 of Vol. 2, 2006 IPCC Guidelines for National Greenhouse Gas Inventories
Value(s) applied	1.747
Choice of data or Measurement methods and procedures	Deemed valid by GS VER Methodology
Purpose of data	To calculate VERs
Additional comment	Measuring emission factors from stove technologies is costly and difficult to do accurately. The CME applies default IPCC emission values.

Relevant SDG Indicator	SDG 13: Take urgent action to combat climate change and its impacts
Data/parameter	**$EF_{b,fuel,non\_CO2}$**
Unit	tCO2/t firewood
Description	Non-CO2 emission factor for use of firewood in baseline scenario
Source of data	IPCC default value, table 2.9 of chapter 2 of Vol. 2, 2006 IPCC Guidelines for National Greenhouse Gas Inventories
Value(s) applied	0.455

Choice of data or Measurement methods and procedures	Deemed valid by GS VER Methodology
Purpose of data	To calculate VERs
Additional comment	Measuring emission factors from stove technologies is costly and difficult to do accurately. The CME applies default IPCC emission values.

Relevant SDG Indicator	SDG 13: Take urgent action to combat climate change and its impacts
Data/parameter	η_b
Unit	Fraction
Description	Efficiency of the baseline system being replaced
Source of data	Methodology
Value(s) applied	10%
Choice of data or Measurement methods and procedures	Default value as per the GS methodology.
Purpose of data	To calculate VERs
Additional comment	Measuring emission factors from stove technologies is costly and difficult to do accurately. The CME applies default IPCC emission values.

Relevant SDG Indicator	SDG 13: Take urgent action to combat climate change and its impacts
Data/parameter	η_p
Unit	Percent
Description	Efficiency of the cookstove i being used in the project scenario
Source of data	Manufacturer's website> section on the specifications project stove Envirofit M5000 (SuperSaver GL) (Reference: Weblink)
Value(s) applied	29.7%
Choice of data or Measurement methods and procedures	The value is derived from Envirofit, the manufacturers of these stoves who issue these results after complying with all relevant test standards and procedures for the certification of their products.
Purpose of data	To calculate VERs
Additional comment	The project stove has been independently tested and is widely used in different countries.

Relevant SDG Indicator	SDG 13: Take urgent action to combat climate change and its impacts
Data/parameter	$f_{NRB,y}$
Unit	Fraction
Description	Default values of fraction of non-renewable biomass for least developed countries and small island developing states
Source of data	CDM EB67 Report Annex 22 (Weblink)

Value(s) applied	0.95
Choice of data or Measurement methods and procedures	The default fNRB approved by CDM EB will be applied to all VPAs. If this value is updated by the EB or rejected by the Myanmar DNA, then each VPA using this value will be updated either at VPA inclusion or verification.
Purpose of data	To calculate VERs
Additional comment	The PP has this value endorsed by the local implementation partner, Mercy Corps

Relevant SDG Indicator	SDG 13: Take urgent action to combat climate change and its impacts
Data/parameter	$B_{b,y}$
Unit	t/hh/a (tons firewood per household per annum)
Description	Quantity of firewood consumed for cooking in baseline scenario during year y
Source of data	Baseline survey
Value(s) applied	4.219
Choice of data or Measurement methods and procedures	The value derived from ex-ante baseline surveys, please find the document titled, "VPA 009 (GS 6599) - Myanmar Stoves Campaign - Baseline Survey Report - March 2018". Three main reasons for higher than usual fuelwood consumption: Most families own livestock, mainly pigs, chicken, and cows. A common feedstock is broken rice which is cooked together with other cereals in order to make it easier to digest for the animals. This habit adds another cooking session per day. Farmers are regularly visited by traders to negotiate purchases of harvested goods. During these visits families prepare food for guests, requiring additional cooking. During fieldwork, additional food is prepared for farmworkers.
Purpose of data	To calculate VERs
Additional comment	All data sources are transparent and verifiable. Refer to baseline survey report for details.

Relevant SDG Indicator	SDG 13: Take urgent action to combat climate change and its impacts
Data/parameter	$LE_{p,i,y}$
Unit	fraction
Description	Leakage in project scenario p, for technology i, during year y
Source of data	Default value
Value(s) applied	0.95
Choice of data or Measurement methods and procedures	Deemed valid per the GS methodology.
Purpose of data	To calculate VERs
Additional comment	

D.2. Data and parameters monitored

(Copy this table for each piece of data and parameter)

Relevant SDG Indicator	SDG 13: Take urgent action to combat climate change and its impacts
Data/parameter:	**$U_{p,y}$**
Unit	Percentage
Description	Usage rate for project cookstove in year y, based on adoption rate and drop off rate as per usage surveys
Measured/calculated/default	Measured
Source of data	Annual Monitoring
Value(s) of monitored parameter	100%
Monitoring equipment	Household Surveys
Measuring/reading/recording frequency:	Measuring and Recording Annually
Calculation method (if applicable):	
QA/QC procedures:	A representative sample of project cookstove end-users will be selected for follow-up by the monitoring and evaluation team. household visits to households will verify information in the distribution database and determine usage drop-off rates.
Purpose of data:	To calculate VERs
Additional comments:	A usage parameter is derived for each age group of project cookstove being credited. Project survey sample size 110 households.

Relevant SDG Indicator	SDG 13: Take urgent action to combat climate change and its impacts
Data/parameter:	**$N_{p,y}$**
Unit	Number of project cookstoves credited (units)
Description	Cookstove in the project database for project scenario p through year y
Measured/calculated/default	Measured
Source of data	VPA 009 (GS 6599) - End User Database
Value(s) of monitored parameter	1603
Monitoring equipment	Sale Record Entries
Measuring/reading/recording frequency:	Measuring
Calculation method (if applicable):	
QA/QC procedures:	Transparent data analysis and reporting
Purpose of data:	To calculate VERs
Additional comments:	The total sales record is divided based on project scenario to create the project database.

Relevant SDG Indicator	SDG 13: Take urgent action to combat climate change and its impacts
Data/parameter:	**DF_n**
Unit	Fraction
Description	Discount factor to account for efficiency loss n of project cookstoves
Measured/calculated/default	Default
Source of data	Fixed default value from the methodology.
Value(s) of monitored parameter	0.99 i.e., 1% efficiency loss per year.
Monitoring equipment	NA
Measuring/reading/recording frequency:	Annual
Calculation method (if applicable):	
QA/QC procedures:	Transparent data analysis and reporting
Purpose of data:	To calculate VERs
Additional comments:	

Relevant SDG Indicator	SDG 13: Take urgent action to combat climate change and its impacts
Data/parameter:	**$DF_{b,\ Stove,\ y}$**
Unit	Fraction
Description	Discount factor to account for usage of baseline cookstove during the year y in project scenario p
Measured/calculated/default	Measured
Source of data	Annual Monitoring
Value(s) of monitored parameter	0%
Monitoring equipment	Household Surveys
Measuring/reading/recording frequency:	Annual
Calculation method (if applicable):	
QA/QC procedures:	Transparent data analysis and reporting
Purpose of data:	To calculate VERs
Additional comments:	The discount factor for baseline-stove use may be determined based on a number of meals cooked using the baseline stove. The required information shall be captured through sample surveys carried out following a random sampling approach for each age-group of the project stove. The minimum number of sample sizes shall be selected following the guidelines provided in section 4.2, option (b) of the POA-DD.

D.3. Implementation of sampling plan

>> (If data and parameters monitored described in section D.2 above are determined by a sampling approach, provide a description on how project participants implemented the sampling plan and surveys for those data and parameters according to the approved PDD.)

A simple random sample firstly of the villages was chosen from the population, which was all the villages included in this particular VPA where stoves were distributed in medium or high volumes (range from 10 stoves up to 50+). These were random choices by the PP with the care that each village had the same probability of being chosen as sample. This list of villages was then handed over to the Implementation Partner (IP) by the PP and the IP led the data collection part in these villages with experienced enumerators. During this exercise, the enumerators could choose random households and not any specific ones to ensure each of the households in these villages has an equal chance of being interviewed.

The selection of households for monitoring essentially can be described to be occurring in two phases: a) At the village selection level and, b) At the household selection level.

At the household selection, as described above, the enumerators are given a list of villages by the PP and the Implementation Partners. All the households in these villages have an equal chance of being interviewed for the survey, and the selection is purely done randomly.

Prior to this, at the village selection for conducting the surveys, the PP had manually selected these villages for the surveys from the total population (N) of villages under this VPA meeting the sales threshold as described above via the (Manual) Lottery Method, as the N was not large. No software support was used here. The PP planned to select 10-12 villages spread across the start and end dates of the stove distribution date under this VPA, and have around 9-12 surveys done in each of the villages, in order to get results from as many different villages possible.

SECTION E. Calculation of SDG outcomes

E.1. Calculation of baseline value or estimation of baseline situation of each SDG outcome

>> (*Provide details of equations and approaches used to calculate/estimate baseline values.)*

The following reporting is based on conditions of the households in this project prior to the project implementation and in the scenario when they were primarily dependent on three stone fires.

SDG 3: Ensure healthy lives and promote well-being for all of all ages
= The households in this VPA were exposed to negative impacts from using three stone fire and constraint on productivity due to more time (and money) was spent on collecting firewood.

SDG 7: Ensure access to affordable, reliable, sustainable and modern energy for all
= The households in this VPA did not have access to an improved cookstove prior to this project.

SDG 8: Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all
= 0 local jobs created of the nature included in this project design.

SDG 13: Take urgent action to combat climate change and its impacts
= 4.2 T/household/annum of wood was consumed, and 13433 tonnes of CO_2 was emitted due to use of three stone fires
= 0 environmental awareness sessions were organised

E.2. Calculation of project value or estimation of project situation of each SDG outcome

>> (*Provide details of equations and approaches used to calculate/estimate project values.)*

SDG 3: Ensure healthy lives and promote well-being for all of all ages

This VPA alone serves 1639 households out of which 1603 are applied for crediting and with the latest usage rate from monitoring tests being 100 %, all 1603 stoves are still in use, which has improved the health and safety of around 7742 people (Average household size = 4.83 people/HH) due to the fuel-efficient

cookstove. This is in line with the Target 3.9.1, which states to reduce the number of mortality rate attributed to household and ambient air pollution. The latest monitoring results show that all 100% of the stove users agree with the improvement in air quality, reduction in smoke and visible health impacts (less burning of eyes, cough, etc). The users also reported a 47% saving in time (around 56 mins per month) for collecting wood after using the project stove.

SDG 7: Ensure access to affordable, reliable, sustainable and modern energy for all

This VPA has brought fuel-efficient cookstove, thus improving the energy efficiency for their cooking practices as compared to the old, three-stone fires, in line with the Target 7.3, which states, By 2030, double the global rate of improvement in energy efficiency. It also covers the Target 7.b, which focuses on bringing technology to LDCs. This VPA alone serves 1639 households out of which 1603 are applied for crediting and with the latest usage rate from monitoring tests being 100 %, all 1603 stoves are still in use, which has improved the health and safety of around 7742 people (Average household size = 4.83 people/HH) due to the fuel-efficient cookstove.

SDG 8: Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all

Myanmar Stoves Campaign's project design includes selecting, training and developing the local men and women for the role of sale agents, for distribution and selling of stoves to the households. This provides these local entrepreneurs with transferable skills and income source. This is in line with the Target 8.3.1, which states, to increase the Proportion of informal employment in non-agriculture employment, by sex. Since the start of the VPA and until the end of this VPA period, 64 such sale agents were trained and developed, which includes 51 women.

SDG 13: Take urgent action to combat climate change and its impacts

The VERs claimed by this VPA, are 8626 VERs during the first issuance. The detailed VER calculations are shown as below:

EX-POST CALCULATION OF EMISSION REDUCTIONS FOR VPA 007 (GS 6129)					
	PARAMETER	**UNIT**	**DESCRIPTION**		
				2018	***Source***
	$N_{p,y}$	-	Number of project cookstoves of each age group operation in year y	**1,603**	Annual Monitoring
	$U_{p,y}$	%	Usage rate for project cookstove in year y, based on adoption rate and drop off rate as per usage surveys	100	*Source: Usage Survey (ex-post)*
	$B_{b,y}$	t/hh/a	Quantity of firewood consumed in baseline scenario during year y	4.22	*Source: Baseline Survey*
	η_b	%	Efficiency of the baseline system being replaced	10	*Methodology*
	$\eta_{p,y}$	%	Efficiency of the system being deployed as part of the project activity	27.92	
	P_y	**t/hh/a**	**Quantity of firewod that is saved in the year y**	**2.71**	
	η_p	%	Efficiency of project cookstove (fraction) determined at the start of the project activity	29.7	
	DF_η	-	Discount factor to account for efficiency loss of project cookstove	0.94	

			per year of operation (fraction)		
	$f_{NRB, y}$	-	Fraction of woody biomass saved by the project activity in period y that can be established as non-renewable biomass	0.95	*Source: Endorsement Letter by Mercy Corps Myanmar, Submitted to GS*
	$EF_{b, fuel, CO2}$	tCO2/tWood	CO2 emission factor of firewood that is substituted or reduced	1.747	*Methodology*
	$EF_{b, fuel, non\_CO2}$	tCO_2/tWood	Non-CO2 emission factor of firewood that is substituted or reduced	0.455	*Methodology*
	$DF_{b, Stove, y}$	%	Usage of baseline cookstove during the year y in project scenario	0	*Source: Usage Survey (ex-post)*
		%	Percent of users who also use baseline cookstove	0	*Source: Usage Survey (ex-post)*
		%	Percent of meals prepared using baseline cookstove	0	*Source: Usage Survey (ex-post)*
	x	-	y-1		
	y	-	Year of the crediting period		
		t CO_2	**Emission reductions of the project activity in period y (max. 10,000)**	**9080**	
		-	**Leakage Discount Factor**	**0.95**	
	ERy	t CO_2	**Emission reductions of the project activity in period y (max. 10,000)**	**8626**	

The equations used to determine the VER calculations are as per The Gold Standard Simplified Methodology for Efficient Cookstoves, Version 01, February 2013, where:

$$ER_y = \sum_{0to1}^{XtoY} N_{p,y} * P_y * U_{p,y} * f_{NRB,y} * (EF_{b,fuel,CO2} + EF_{b,fuel,non\_CO2}) * (1 - DF_{b,Stove,y})$$

$$P_y = B_{b,y} * (1 - \frac{\eta_b}{\eta_{p,y}})$$

$$\eta_{p,y} = \eta_p * (DF_\eta)^{y-1} * 0.94$$

In addition to this, in line with Target 13.3, states, to improve education, awareness-raising and human and institutional capacity on climate change mitigation, adaptation, impact reduction and early warning. The Myanmar Stoves Campaign has conducted more than 60 such village level awareness raising events which were attended by more than 1775 participants, of which were 1163 were females.

The project, as per Target 13.b.1, also uses the carbon finance to support technology and capacity building for mechanisms for raising capacities for effective climate change-related planning and management, including focusing on women, youth and local and marginalized communities

E.3. Calculation of net benefits as difference of baseline and project values or direct calculation for each SDG outcome

>>

SDG 3: Ensure healthy lives and promote well-being for all of all ages

a) Baseline Scenario = None of the households applied for crediting had any form of improved cookstove. They were exposed to the detrimental health impacts due to three stone fires and more time being spent on collecting firewood.
Baseline Calculations: 0 household/people.

b) Project Scenario (& the net benefit) = The project has 1603 stove eligible for ER claim and with 100% usage rate, all 1603 stoves are still in use, which has positively impacted the health and safety of around 7742 people. The latest monitoring results show that all 100% of the stove users agree with the improvement in air quality, reduction in smoke and visible health impacts (less burning of eyes, cough, etc). The users also reported a 47% saving in time (around 56 mins per month) for collecting wood after using the project stove.
Project Calculations: 1603 stoves in use * 4.83 people/HH (Avg. household size) = 7742 people in total
For time savings and health impact results, please refer to 'VPA 009 (GS 6599) – Project Monitoring Survey Results'.

SDG 7: Ensure access to affordable, reliable, sustainable and modern energy for all

a) Baseline Scenario = The households in this VPA applied for crediting did not have access to any form of improved cookstove.
Baseline Calculations: 0 household/people.

b) Project Scenario (& the net benefit) = This VPA alone serves 1639 households out of which 1603 are applied for crediting and with the latest usage rate from monitoring tests being 100 %, all 1603 stoves are still in use, which has ensured access to affordable, reliable, sustainable and modern energy for around 7742 people (Average household size = 4.83 people/HH)
Project Calculations: 1603 stoves in use * 4.83 people/HH (Avg. household size) = 7742 people in total
For time savings and health impact results, please refer to 'VPA 009 (GS 6599) – Project Monitoring Survey Results'.

SDG 8: Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all

a) Baseline Scenario = None of the local jobs which are involved in this project design were created during the baseline scenario.
Baseline Calculations: 0 jobs created.

b) Project Scenario (& the net benefit) = Since the start and until the end of this VPA period, 64 sale agents were trained and developed, which includes 51women.
Project Calculations: Values derived from the 'VPA 009 (GS 6599) - Project Tracking File'.

SDG 13: Take urgent action to combat climate change and its impacts

a) Baseline Scenario = Around 4.2 Tonnes of Wood was consumed per household per year and about 13433 Tonnes of CO_2 was emitted per household by burning firewood per year in this VPA. In addition, there were no awareness raising campaigns around the climate change/global warming issues.
Baseline Calculations: Baseline fuel consumption derived from 'VPA 009 (GS 6599) - Baseline Survey Report'

b) Project Scenario (& the net benefit) = Around 2.71 Tonnes of firewood is saved per year per household and the VERs claimed by this VPA, are 8626 VERs during the first issuance. In addition to this, in line with Target 13.3, states, to improve education, awareness-raising and human and institutional capacity on climate change mitigation, adaptation, impact reduction and early warning. The Myanmar Stoves Campaign has conducted more than 60 such village level awareness raising events which were attended by more than 1775 participants, of which 1163 were females.

Project Calculations: Please refer to 'VPA 009 (GS 6599) - Ex Post Emission Reductions Sheet' for ER calculations. The values of awareness raising events are derived from the 'VPA 009 (GS 6599) - Project Tracking File'.

E.4. Summary of ex-post values of each SDG outcome for the current monitoring period

Item	Baseline estimate	Project estimate	Net benefit
SDG 3	**0 ICS in use** **0 people impacted positively on health and safety, improved productivity** (Source: Baseline Studies)	**1603 ICS in use** **7742 people impacted positively on health and safety and 47% saving in time for collecting firewood** (Source: Annual Monitoring Surveys)	**1603 ICS in use** **7742 people impacted positively on health and safety and 47% saving in time for collecting firewood** (Source: Calculations derived from Baseline and Monitoring data)
SDG 7	**0 households benefited with an ICS** (Source: Baseline Studies)	**1603 households benefited and have a working ICS** (Source: Annual Monitoring Surveys)	**1603 households benefited and have a working ICS** (Source: Annual Monitoring Surveys)
SDG 8	**0 local jobs created** (Source: Baseline Studies)	**64 local sale agents trained and developed** (Source: Annual Monitoring Surveys)	**64 local sale agents trained and developed** (Source: Annual Monitoring Surveys)
SDG 13	**4.2 Tonnes of Wood consumed per household per year** (Source: Baseline Studies) **13722 tCO_2 emitted by all household in the VPA per year** (Source: Emission Calculations derived from Baseline Studies) **0 village level awareness events conducted attended by 0 participants** (Source: Baseline Studies)	**1.49 Tonnes of Wood consumed per household per year** (Source: Calculations derived from baseline, monitoring studies and ER formula) **5098 tCO_2 emitted by all household in the VPA per year** (Source: Calculations derived from baseline, monitoring studies and ER formula) **60 village level awareness events conducted attended by 1775 participants** (Source: Annual Monitoring Surveys)	**2.71 Tonnes of Wood saved per household per year** (Source: Calculations derived from baseline, monitoring studies and ER formula) **8626 tCO_{2e} saved** (Source: Calculations derived from baseline, monitoring studies and ER formula) **60 village level awareness events conducted attended by 1775 participants** (Source: Annual Monitoring Surveys)

E.5. Comparison of actual value of outcomes with estimates in approved PDD

Item	Values estimated in ex ante calculation of approved PDD	Actual values achieved during this monitoring period
SDG 3	7742 people impacted positively on health and safety, and 44% saving in time for collecting firewood	7742 people impacted positively on health and safety, and 47% saving in time for collecting firewood
SDG 7	1603 households receiving Energy efficient cookstoves in Myanmar, an LDC	1603 households (eligible for crediting) received Energy efficient cookstoves in Myanmar, an LDC, and all 1603 in use after year 1
SDG 8	64 local sale agents trained and developed	64 local sale agents trained and developed
SDG 13	9695 tCO_{2e} saved + 60 village level awareness events conducted attended by 1775 participants	8626 tCO_{2e} saved + 60 village level awareness events conducted attended by 1775 participants

E.6. Remarks on difference from estimated value in approved PDD

>> Difference in SDG 13 due to change in the number of stoves being credited.

SECTION F. Stakeholder inputs and legal disputes

F.1. List all inputs/grievances which have been received for the project during the monitoring period together with their respective answers/actions

>> The PP engaged with the stove users, sale agents and the local administration but did not receive any inputs/grievances during the monitoring period.

F.2. List all inputs/grievances from previous monitoring period where follow up action is to be verified in this monitoring period

>> Not Applicable. This is the first monitoring period.

F.3. Provide details of any legal contest or dispute that has arisen with the project during the monitoring period

Not Applicable.