

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. 006
Gold Standard project id	GS ID of the Activity (VPA 006) = GS 5662
Version number of the monitoring report	V3.0 on 03/10/2019, V2.0 on 17/09/2019 V 1.0 on 08/07/2019 (Third Monitoring Period)
Completion date of the monitoring report	V 1.0 (on 08/07/2019)
Date of project design certification	24/11/2017 (Validated on)
Start date of crediting period	01/05/2016
Duration of this monitoring period	01/05/2018 - 30/04/2019 – Duration of this monitoring period. (Third Term of Monitoring)
Duration of previous monitoring period	1 year
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)	<p>1 – SDG 3: Ensure healthy lives and promote well-being for all at all ages (Target: Around 10,000 people)</p> <p>2 – SDG 7: Ensure access to affordable, reliable, sustainable and modern energy for all (Target: Around 2189 households)</p> <p>3 – SDG 8: Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all (Target: Around 67 jobs created)</p> <p>4 - SDG 13: Take urgent action to combat climate change and its impacts (Target: Around 10,000 VERs, and 69 village events with 2320 participants)</p>
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.

<p>Estimated amount of annual average certified SDG impact (as per approved PDD)</p>	<p><u>SDG 3: Ensure healthy lives and promote well-being for all of all ages</u></p> <p>This VPA alone serves 1821 households and has improved the health and safety of around 10,000 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.</p> <p><u>SDG 7: Ensure access to affordable, reliable, sustainable and modern energy for all</u></p> <p>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</p> <p><u>SDG 8: Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all</u></p> <p>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 program and until the end of this VPA period, 410 such sale agents were trained and developed.</p> <p><u>SDG 13: Take urgent action to combat climate change and its impacts</u></p> <p>The VERs claimed by this VPA, are expected to be around 10,00 VERs during the first issuance.</p> <p>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 600 such village level awareness raising events which were attended by more than 20,000 participants, of which were women are around 51%</p> <p>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</p>
<p>Total amount of certified SDG impact (as per approved methodology) achieved in this monitoring period</p>	<p><u>SDG 3: Ensure healthy lives and promote well-being for all of all ages</u></p> <p>This VPA alone serves 2189 households of which 1563 are applied for crediting and 1506 in use (as per the latest usage rate) and has improved the health and safety of around 7274 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</p> <p><u>SDG 7: Ensure access to affordable, reliable, sustainable and modern energy for all</u></p>

	<p>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</p> <p><u>SDG 8: Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all</u></p> <p>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, 67 such jobs were created, from which 42 are by women.</p> <p><u>SDG 13: Take urgent action to combat climate change and its impacts</u></p> <p>During the third issuance, this VPA generated 7563.6 VERs</p> <p>The vintage break of VERs is as follows:</p> <table border="1"> <thead> <tr> <th>From</th> <th>To</th> <th>VERs</th> </tr> </thead> <tbody> <tr> <td>01/05/2018</td> <td>31/12/2018</td> <td>5042.4</td> </tr> <tr> <td>01/01/2019</td> <td>30/04/2019</td> <td>2521.2</td> </tr> <tr> <td>Total</td> <td></td> <td>7563.6</td> </tr> </tbody> </table> <p>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 between the start and end the end date of the stove distribution of this VPA period, conducted 69 such village level awareness raising events which were attended by a total of 2320 participants, where 55% were women.</p> <p>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</p>	From	To	VERs	01/05/2018	31/12/2018	5042.4	01/01/2019	30/04/2019	2521.2	Total		7563.6
From	To	VERs											
01/05/2018	31/12/2018	5042.4											
01/01/2019	30/04/2019	2521.2											
Total		7563.6											

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 April 2019, the project has covered more than 1000 villages 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 (17000 MMK 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 field 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.

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This VPA consist of 1563 stoves for crediting (2189 in total)

Date of first stove sale & start date of the project activity = 01/05/2016 (to 28/02/2017)

Start date of crediting period = 01/05/2016

Third term monitoring period, as reported here: 01/05/2018 – 30/04/2019

Monitoring surveys conducted during: 4,5,6,&7 March 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 – 006 are majorly in the villages of, which are clearly identifiable and can be distinguished from the other VPAs.

Stoves Distributed under VPA 006 in the following Villages:				
Kyauk Pa Taung (Ward)	Thit Pa Lwe Kan	Thet Kal Date	Mying Thar (Myaing Thar)	Bouk Taw Wa
Tha Yet Pin (Tha Yat Pin)	Pwee Lone Kyaw	Kyee Kone ward	Thin Twe Sel	Sauk Inn
Kyauk Hpu	Htein Kan Gyi	Bagan Tat	Kyat Min Toon	Ae Bya
Tha Man Kan(S) (Tha Man Kan)	Tha Pyay Hla	Ye Htut	Pauk Taw	Ma Gyi Kine
Bwae Char (Bwe Char)	Oak Ka Lay	Inn Khaung	Hnin Si	Inn Kuu
Gone Nyin New	Shwe Tote Kone	Pha Yar Gyi (Ward)	Plate	Sa Kar Tae
Lay Seik Kone(W) (Lae Sel Kone)	Tel Kone/Min Hla	Thee Kone	Dite Oo	Moe Nan Chone
Lay Seik Kone East (Lae Sel Kone)	Aung Chan Thar Street	Kone Ywar (Gone Ywar)	Myin Twin	Suu Kar King
Shwe Dar	Shan Ma Nge	Sint Kaing Township	Naw Khme	Kan Gyi (Kan Gi Aout)
Nyaung Kan	Meik Ta Bala	Hinn Ywet Su (Hin Ywat Su)	Thin Ga Tone	Myo Ma Ward
Than Pwae	Southern East (Army)	Ar Laung	Kin Bag	Chan Aye Thar San Township
Youk Yoe	Yae Hwet	Min Chi Naing	Aung Thar	Nga Zin Yine (Ngar Zin Yine)
Inn Tai Thar (Inn Tai)	Yandanar Man Aung Ward	Yan Bat Lo	Nwar Tat	Ka Lay
Yay Twin Gyi	Yar Chay (Ywar Shay)	Yae Baw Gyi	Mae Khin Gyi	Taung Kine
Yoe Sone	Da Hat Kyin	Thar Ga Ya (E.)	Htan Lone Tat	
No.5 Ward-Tharsi	Ywar Mon Thar	Lawe Kyin	Gway Saung	
No.1 Ward-Tharsi	Nyaung Kan	Nout Taw Par	Kyauk Sa Ka Lay	
Toll gate-Tharsi	Poe Mae Zar Kone	Palae Se	Taung Ta Lone	
Industrial zone - Meikhtila	War Tan Road	Kywut Thit	Kya Swar	
Sit Khin	Tike Kyauk Lone Road	Kone Ni	Ta Lin Gyi	
Nyaung Oak Phee	Kyauk Sein Taung	Palate	Sapar Twin	
Done Kone	Ale Ywar	Nyaung Pin Thar	Zay Ywar	
Myauk Pie	Site Pyo Yae (Site Pyoe Yae)	Gway Kone (Gwe Kone)	Mying Thar	
Kan Thar	Sue Poke Kan	Htan Naung Kine Kone	Tha Pyay Kan	
Nat Kan (Nat Nan)	Mone Pin Sone	Nga Zin Yine (Ngar Zin Yine)	Koke Ko Kan	

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.)

This VPA consist of 1563 stoves for crediting (2189 in total)

Start date of crediting period = 01/05/2016, five years in total, renewable twice.

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. For the reported monitoring period, around 96.4% of the users have been reported to use the improved cookstoves. There have been no deviations in this VPA as per the approved project design. There was however delay in getting the accurate number of end users under this VPA from the field to the office and into the electronic database, due to the reasons mentioned during the internal verification for the first term. This led to the change in numbers of end users and eligible stoves (households) under this VPA, as mentioned in B.2.1 below. These were post-registration changes. The VPA still maintains adherence to the approved project design.

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.)*

B.2.2. Corrections

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

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.)*

The number of households in this VPA has been changed from 1821 considered earlier to 2189 total listed households, but only 1563 households have been considered eligible and have been applied for final verification after incorporating all the changes received till the fourth round of internal verification with GS, during the first monitoring period.

SECTION C. Description of monitoring system applied by the project

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The start of the stove distribution under this VPA was on 01/05/2016 and the distribution ended on 28/02/2017.

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 comprises the following data:

- Date of Sale¹
- 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-users²

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 is converted and saved electronically for monitoring and analysis purposes. A mechanism, designed jointly between the CME and the implementing partner, has been 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 is cross checked with import data, usage and other relevant data.

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

The maintenance services are rendered by the local Mercy Corps office, as and when the need arises from the end-user/sale agents. However, during this monitoring period, no such services were requested by the end users.

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 consists 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

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 is 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 are 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 are 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. However, in this period, the stoves age group considered is 2-3.
- Monitoring Survey to reassess household kitchen regimes. CME and/or Implementation Partner randomly samples households from the sales agreements received. Sampling is 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 also monitors the physical conditions of the cookstoves.

For this monitoring period in this VPA, there have been no cases of replacements or repairs reported.

The project monitoring survey for this VPA, was conducted from 4th to 7th March 2019.

During this period, 110 household face to face surveys were conducted in a total of 10 villages under this VPA. These villages are Sapar Twin, Myaing Thar, Nga Zin Yine, Tha Man Kan, Taung Kine, Ma Gyi Kine, Shwe Toke Kone, Thar Ga Ya (E), Myin Chi Naing, Kin Bag.

- Monitoring Team:

The team involved in the project monitoring exercise is as follows:

Name	Designation & Role	Qualification
Bhushan Trivedi	<p>Consultant to the Soneva Foundation on Myanmar Stoves Campaign.</p> <p>Bhushan led the designing of the project monitoring survey exercise + QA/QC of data.</p>	<p>Bhushan Trivedi is a consultant in the field of social development and social entrepreneurship. He has an extensive experience of working in the development sector in India and Myanmar, specifically on energy access initiatives. Apart from being a consultant to the Soneva Foundation on Myanmar Stoves Campaign for four years, he also led a solar PV micro-grid project in rural Myanmar.</p> <p>Bhushan has earned his bachelor's degree in Mechanical Engineering from Pune University, India. A Masters in Environmental Assessment & Management from Salford University, Manchester, UK, and a Diploma in Social Entrepreneurship from NMIMS, Mumbai.</p>
Phyo Phyo Wai	<p>Senior Program Manager, Energy Venture Program for Mercy Corps (Myanmar)</p> <p>Phyo Phyo planned the data collection, training of enumerators, supervision and QA/QC of data.</p>	<p>Phyo is Senior Program Manager managing Energy Social Venture Program for Mercy Corps (Myanmar). She has extensive experiences in Development sectors, especially in Resilience sector; Disaster Risk Reduction, Climate Change and Civil Society Strengthening Sector.</p> <p>Phyo received a Bachelor Degree, majoring in Chemistry from University of Distance Education, Yangon, Myanmar. She also received Master in Development Studies (M.Dev.S) from the Institute of Economics, Yangon and Master in Development Management (MDM) from the Asian Institute of Management (AIM), Philippine. She has also obtained the Post-Graduate Diploma in Social Work from Yangon Art & Science University, Myanmar and Diploma in Teaching English for Speaker of Other Language from London Teacher Training College, UK.</p>

U Hla Khaing	Enumerator Data Collection	U Hla Khaing is a Myanmar national having significant experience in data collection process with Mercy Corps and other organizations. Moreover, he performed as one of the members of Village Development Committee in LIFT Project implemented by Mercy Corps since in 2010.
U Nyeing Maung	Enumerator Data Collection	U Nyeing Maung is a Myanmar national and also one of the members of Village Development Committee in LIFT Project implemented by Mercy Corps in 2010, having relevant experience in data collection relating to community development projects. He is currently living in Tel Lay Pin village, Tel Lay Pin Village Tract, Pyawbwe Township, Mandalay Division.

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	tCO ₂ /t firewood
Description	CO ₂ 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	tCO ₂ /t firewood
Description	Non-CO ₂ 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

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Additional comment	Measuring emission factors from stove technologies is costly and difficult to do accurately. The CME applies default IPCC emission values.
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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

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Choice of data or Measurement methods and procedures	The default fNRB approved by CDM EB is 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 is 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	3.94
Choice of data or Measurement methods and procedures	<p>The value derived from ex-ante baseline surveys. For more details, please refer the supporting document titled, 'VPA 006 (GS 5662) - Baseline Survey Report'</p> <p>Three main reasons for higher than usual fuelwood consumption:</p> <p>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.</p> <p>Farmers are regularly visited by traders to negotiate purchases of harvested goods. During these visits families prepare food for guests, requiring additional cooking.</p> <p>During fieldwork, additional food is prepared for farmworkers.</p>
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	Not Applicable

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	96.4%
Monitoring equipment	Household Surveys
Measuring/reading/recording frequency:	Measuring and Recording Annually
Calculation method (if applicable):	Not Applicable
QA/QC procedures:	A representative sample of project cookstove end-users is selected for follow-up by the monitoring and evaluation team. All the 110 households were visited to conduct the household surveys for monitoring 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 006 (GS 5662) - End User Database (Third Term)
Value(s) of monitored parameter	1563
Monitoring equipment	Sale Record Entries
Measuring/reading/recording frequency:	Annual
Calculation method (if applicable):	Not 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. For period 2016-17 = 0.94 For period 2017-18 = 0.93 For period 2018-19 = 0.92
Monitoring equipment	NA
Measuring/reading/recording frequency:	Annual
Calculation method (if applicable):	Not Applicable
QA/QC procedures:	Transparent data analysis and reporting
Purpose of data:	To calculate VERs
Additional comments:	Not Applicable

Relevant SDG Indicator	SDG 13: Take urgent action to combat climate change and its impacts
Data/parameter:	DF_{p, Stove, y}
Unit	percentage
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	0.823%
Monitoring equipment	Household Surveys
Measuring/reading/recording frequency:	Annual
Calculation method (if applicable):	Not 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.

SDG Indicators & Safeguarding Principles Assessment (SPA) Monitoring Indicators and Status:

Relevant SDG Indicator	SDG 3: Ensure healthy lives and promote well-being for all at all ages
Data / Parameter	Improvement in the indoor air quality, and health and safety of the stove users.
Unit	%
Description	Qualitative feedback from the stove users
Source of data	Project Survey
Value(s) applied	100%
Measurement methods and procedures	Household Surveys
Monitoring frequency	Annual
QA/QC procedures	Transparent data collection, analysis and reporting.
Purpose of data	Aimed at gathering and analysing user feedback on improvement in Indoor Air Quality and sub-sequent health benefits (eg: improvements in irritation to eyes, breathing problems, other health and safety benefits). The FES has reported reductions in CO and PM emissions as compared to three stone fires by 82% and 70% respectively (Link), which contributes to the health and well-being by reduction of Indoor Air Pollution.
Additional comment	Not Applicable

Relevant SDG Indicator	SDG 7: Ensure access to affordable, reliable, sustainable and modern energy for all
Data / Parameter	Number of households served.
Unit	Number
Description	Total households and lives impacted
Source of data	Ongoing data collection and storage.
Value(s) applied	1563 eligible households in this VPA, and 7274 lives impacted.
Measurement methods and procedures	Ongoing, Project User Database. The Total Sales Record collects and maintains the total number of FES distributed in this VPA, from its start date to end date, which helps to estimate the number of lives this VPA has impacted.
Monitoring frequency	Annual
QA/QC procedures	Transparent data collection, analysis and reporting.
Purpose of data	To measure the number of households (and lives) impacted by access of a fuel-efficient cookstove.
Additional comment	Not Applicable

Relevant SDG Indicator	SDG 8: Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all
Data / Parameter	Number of Sale Agents (Men and Women) created for the sales/distribution of stoves.
Unit	Number
Description	Employment and local capacity built up

Source of data	Ongoing data collection and storage. The Project Tracking File records the number of sale agents created during each VPA.
Value(s) applied	67 sale agent jobs created during between the start and end dates of the stove distribution period under this VPA.
Measurement methods and procedures	Ongoing, Project Tracking File
Monitoring frequency	Annual
QA/QC procedures	Transparent data collection, analysis and reporting.
Purpose of data	To measure the number of jobs created local men and women in the target region.
Additional comment	Not Applicable

Relevant SDG Indicator	SDG 13: Take urgent action to combat climate change and its impacts
Data / Parameter	Number of: i) Village Level Awareness Raising Events and ii) Attendance
Unit	Number
Description	Local awareness and sensitisation over climate/deforestation issues
Source of data	The Project Tracking File records the number awareness raising sessions conducted and the attendance in such meetings.
Value(s) applied	69 village level events attended by 2320 participants.
Measurement methods and procedures	Ongoing, Project Tracking File
Monitoring frequency	Annual
QA/QC procedures	Transparent data collection, analysis and reporting.
Purpose of data	To measure the number of people made aware and sensitised about the issues of global warming, climate change, deforestation impacts and transitioning towards energy efficient choices in the target region.
Additional comment	The Myanmar Stoves Campaign conducts village level awareness raising campaigns, where it aims to educate and sensitize the target audience broadly on key environmental issues, implications of deforestation, global warming and climate change and the importance of energy efficient cooking solutions. These workshops are conducted from village to village and are attended by the men, women and children and the village head of the respective villages. In these meetings, the discussion is around the environmental challenge and the project idea, design, and partners, the project cookstoves and its advantages, cooking demonstrations, the purchase points, and payment plans and general feedback of the audience/QnA with them. Between the start and end dates of the stove distribution period under this VPA , 69 such events were conducted, which were attended by a total of 2320 participants, where 1290 were women. and 1030 were men. These are all local people from the villages the project operates in.

Safeguarding Principles Assessment (SPA) Monitoring

Relevant SPA	Safeguarding Principle 1 – Human Rights
Data / Parameter	Non violation of Human rights and abuses of any kind
Unit	Incidents
Description	Qualitative feedback from the stove users/sale agents, and other local stakeholders
Source of data	Ongoing Observations
Value(s) applied	0%
Measurement methods and procedures	Discussions with users and sale agents during households surveys conducted by the PD, and during the objective observer/external assessor visit.

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Monitoring frequency	Annual
QA/QC procedures	Transparent data collection, analysis and reporting.
Purpose of data	To ensure internationally proclaimed human rights for everyone associated with this project.
Additional comment	Our ongoing discussions with relevant stakeholders reveals that no such incidents have been reported.

Relevant SPA	Safeguarding Principle 4 - Cultural heritage, Indigenous Peoples, Displacement and Resettlement
Data / Parameter	Project in sites, structures, or objects with historical, cultural, artistic, traditional or religious values or intangible forms of culture
Unit	Number
Description	Project being implemented in the above-mentioned site(s)
Source of data	Local input/records of such sites of importance
Value(s) applied	0
Measurement methods and procedures	On-going evaluation of such sites
Monitoring frequency	On-going
QA/QC procedures	Transparent data collection, analysis and reporting.
Purpose of data	To ensure the project does not negatively impact these kind of special sites/structures.
Additional comment	None of our installations or other aspects of the project are around sites, structures, or objects with historical, cultural, artistic, traditional or religious values or intangible forms of culture

Relevant SPA	Safeguarding Principle 6 - Economic Impacts
Data / Parameter	No forced labour
Unit	%
Description	Any sale agents/other labour being forcefully employed by the project
Source of data	Ongoing observations
Value(s) applied	0
Measurement methods and procedures	Discussions with sale agents during households' surveys conducted by the PD, and during the objective observer/external assessor visit.
Monitoring frequency	Annual
QA/QC procedures	Transparent data collection, analysis and reporting.
Purpose of data	To ensure there is no forced labour of any kind with the project.
Additional comment	No forced labour employed

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.)

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The PP chose a list of villages where the project made medium to high volume of sales. Following this, a simple random sampling approach was employed to choose between 8-12 (range) villages from this list. Lastly, the households in these chosen village were selected randomly for usage surveys.

Sampling, and Selection of Villages and Households for Survey

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 villages spread across the start and end dates of the stove distribution date under this VPA, and have around 10-12 surveys done in each of the villages, in order to get results from as many different villages we can.

As per the 'Guideline: Sampling and surveys for CDM project activities and programmes of activities, version 04.0', paragraph 4. Sampling requirements point no 10 states, "Where there is no specific guidance in the applicable methodology, project proponents shall use 90/10 confidence/precision as the criteria for reliability of sampling efforts for small-scale project activities". During this monitoring exercise, 110 surveys were conducted out of 2189 total users, achieving a confidence level of 95%, and 9.108% margin of error. The margin of error lies within the criteria, and the required level of confidence has been achieved as per the specific guidance. (Calculation Ref: <https://goodcalculators.com/margin-of-error-calculator/>)

The list of households which were surveyed is as follows:

Survey No	Stove Number	Serial	Household Name	Owner	Village Name	Date of Purchase of FES	Date of Survey
1	EM1G-075328		Daw Hla Hla		Sapar Twin	24/02/2017	07/03/2019
2	EM1G-075594		Daw Hla Hla Myint		Sapar Twin	23/02/2017	07/03/2019
3	EM1G-075578		Daw Htay Ye		Sapar Twin	23/02/2017	07/03/2019
4	EM1G-074879		Daw Khin Mar Than		Sapar Twin	24/02/2017	07/03/2019
5	EM1G-076234		U Khin Mg Nyunt		Sapar Twin	23/02/2017	07/03/2019
6	EM1G-074574		Daw Ni Shwe		Sapar Twin	24/02/2017	07/03/2019
7	EM1G-076158		U Myint Naing		Sapar Twin	23/02/2017	07/03/2019
8	EM1G-075698		Daw Mi Khaing		Sapar Twin	24/02/2017	07/03/2019
9	EM1G-075111		Daw Saw Win		Sapar Twin	24/02/2017	07/03/2019

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10	EM1G-076261	U Thar Shan	Sapar Twin	23/02/2017	07/03/2019
11	EM1G-075422	Daw San Hla	Myaing Thar	24/02/2017	07/03/2019
12	EM1G-075826	Daw Mi San	Myaing Thar	27/02/2017	07/03/2019
13	EM1G-075035	Daw Sein Aye	Myaing Thar	24/02/2017	07/03/2019
14	EM1G-076248	Daw Eu	Myaing Thar	27/02/2017	07/03/2019
15	EM1G-075806	Daw Khin Saw Win	Myaing Thar	23/02/2017	07/03/2019
16	EM1G-075984	U Than Shein	Myaing Thar	26/02/2017	07/03/2019
17	EM1G-074143	U Tint Wai	Myaing Thar	23/02/2017	07/03/2019
18	EM1G-074765	U Khin Mg Aye	Myaing Thar	24/02/2017	07/03/2019
19	EM1G-075991	Daw Sein Ma	Myaing Thar	26/02/2017	07/03/2019
20	EM1G-074853	Daw Zin Mar Oo	Nga Zin Yine	25/01/2017	07/03/2019
21	EM1G-074513	Daw Ye Win	Nga Zin Yine	26/01/2017	07/03/2019
22	EM1G-074466	Daw San Aye	Nga Zin Yine	29/01/2017	07/03/2019
23	EM1G-074098	Daw Kyaung Kywe	Nga Zin Yine	25/01/2017	07/03/2019
24	EM1G-075254	Daw Lan	Nga Zin Yine	23/02/2017	07/03/2019
25	EM1G-074991	Daw Myint Khaing	Nga Zin Yine	29/01/2017	07/03/2019
26	EM1G-074835	Daw Aye Maw	Nga Zin Yine	25/01/2017	07/03/2019
27	EM1G-075251	Daw Lay	Nga Zin Yine	31/01/2017	07/03/2019
28	EM1G-074846	U Tun Tun	Nga Zin Yine	25/01/2017	07/03/2019
29	EM1G-075500	U Thein Win	Nga Zin Yine	21/02/2017	07/03/2019
30	EM1G-074015	Daw Aye San	Nga Zin Yine	25/01/2017	07/03/2019
31	EM1G-065442	U Pu	Tha Man Kan	13/05/2016	04/03/2019
32	EM1G-065537	U Kayin	Tha Man Kan	01/06/2016	04/03/2019
33	EM1G-066639	U San	Tha Man Kan	21/05/2016	04/03/2019
34	EM1G-065305	Daw Mya Tin	Tha Man Kan	13/06/2016	04/03/2019
35	EM1G-065524	Daw Khin Mar	Tha Man Kan	13/05/2016	04/03/2019
36	EM1G-065579	U Hla Myint	Tha Man Kan	07/08/2016	04/03/2019
37	EM1G-065530	U Tin Myint	Tha Man Kan	13/05/2016	04/03/2019
38	EM1G-065352	U Kyaw Thu	Tha Man Kan	22/05/2016	04/03/2019
39	EM1G-065435	Daw Ye	Tha Man Kan	13/05/2016	04/03/2019
40	EM1G-065528	U Htein Lin	Tha Man Kan	07/08/2016	04/03/2019
41	EM1G-065464	Daw Pu Ma	Tha Man Kan	04/10/2016	04/03/2019
42	EM1G-075322	U Zaw Moe	Taung Kine	24/02/2017	06/03/2019
43	EM1G-075420	U Win Ko	Taung Kine	23/02/2017	06/03/2019
44	EM1G-074223	U Than Tun	Taung Kine	23/02/2017	06/03/2019
45	EM1G-074766	Daw Thein Thein Nu	Taung Kine	01/08/2016	06/03/2019
46	EM1G-075257	Daw San Nu	Taung Kine	24/02/2017	06/03/2019
47	EM1G-074062	Daw Khin Soe Aung	Taung Kine	24/02/2017	06/03/2019
48	EM1G-074100	Ma Zin Mar Win	Taung Kine	25/02/2017	06/03/2019
49	EM1G-075087	U Khin Mg	Taung Kine	23/02/2017	06/03/2019
50	EM1G-074009	Ma Swe Zin Win	Taung Kine	24/02/2017	06/03/2019
51	EM1G-074116	U Hla Ohn	Taung Kine	25/02/2017	06/03/2019

52	EM1G-075792	Daw Khin San Nwet	Taung Kine	23/02/2017	06/03/2019
53	EM1G-074963	Daw Than Yin	Taung Kine	23/02/2017	06/03/2019
54	EM1G-075104	U Myint Ko	Ma Gyi Kine	22/02/2017	06/03/2019
55	EM1G-075634	U Aung Soe Win	Ma Gyi Kine	22/02/2017	06/03/2019
56	EM1G-076121	Daw Tin Nwet	Ma Gyi Kine	22/02/2017	06/03/2019
57	EM1G-076156	Ma Tin Moe Moe	Ma Gyi Kine	22/02/2017	06/03/2019
58	EM1G-074220	U Zaw Min	Ma Gyi Kine	22/02/2017	06/03/2019
59	EM1G-076316	Daw Khin Htwe	Ma Gyi Kine	22/02/2017	06/03/2019
60	EM1G-075636	U Hla Han	Ma Gyi Kine	22/02/2017	06/03/2019
61	EM1G-075789	U Kyaw Myo	Ma Gyi Kine	22/02/2017	06/03/2019
62	EM1G-075168	U Aung Min	Ma Gyi Kine	22/02/2017	06/03/2019
63	EM1G-075692	U Tin Maung	Shwe Toke Kone	25/02/2017	04/03/2019
64	EM1G-075478	U Myint	Shwe Toke Kone	16/10/2016	04/03/2019
65	EM1G-075459	U Mg San	Shwe Toke Kone	16/10/2016	04/03/2019
66	EM1G-074361	U Kyaw Thu	Shwe Toke Kone	25/10/2016	04/03/2019
67	EM1G-074687	Daw Yin Nu	Shwe Toke Kone	16/10/2016	04/03/2019
68	EM1G-076016	Daw Mya Shwe	Shwe Toke Kone	16/10/2016	04/03/2019
69	EM1G-075618	U Than	Shwe Toke Kone	25/10/2016	04/03/2019
70	EM1G-076841	Daw Hla Lay	Shwe Toke Kone	16/10/2016	04/03/2019
71	EM1G-074364	U Aung Khin	Shwe Toke Kone	16/10/2017	04/03/2019
72	EM1G-075235	U Aung Ngwe	Shwe Toke Kone	25/10/2016	04/03/2019
73	EM1G-075196	U Kyaw Aung	Shwe Toke Kone	16/10/2016	04/03/2019
74	EM1G-075603	U Kyaw Win	Shwe Toke Kone	16/10/2016	04/03/2019
75	EM1G-076288	U Tun Lin	Thar Ga Ya (E)	21/01/2017	05/03/2019
76	EM1G-074980	U Win	Thar Ga Ya (E)	20/01/2017	05/03/2019
77	EM1G-076135	Daw Mi Lay	Thar Ga Ya (E)	20/01/2017	05/03/2019
78	EM1G-074593	Daw Thida	Thar Ga Ya (E)	20/01/2017	05/03/2019
79	EM1G-075357	U Myo Min	Thar Ga Ya (E)	28/02/2017	05/03/2019
80	EM1G-074011	U Kyaw Than	Thar Ga Ya (E)	29/01/2017	05/03/2019
81	EM1G-075395	U Win Khaing	Thar Ga Ya (E)	18/01/2017	05/03/2019
82	EM1G-074519	U Shin	Thar Ga Ya (E)	21/01/2017	05/03/2019
83	EM1G-075764	U Nan Oo	Thar Ga Ya (E)	09/02/2017	05/03/2019
84	EM1G-075685	U Kyaw Win	Thar Ga Ya (E)	21/01/2017	05/03/2019
85	EM1G-074447	U Aung Kyaw Htoo	Thar Ga Ya (E)	14/01/2017	05/03/2019
86	EM1G-074217	Daw Than Than Win	Thar Ga Ya (E)	19/01/2017	05/03/2019
87	EM1G-076233	U Tun	Myin Chi Naing	19/01/2017	05/03/2019
88	EM1G-075279	U Kyi Hlaing	Myin Chi Naing	25/01/2017	05/03/2019
89	EM1G-074891	U Naing Tun	Myin Chi Naing	20/01/2017	05/03/2019
90	EM1G-074355	Daw Thida	Myin Chi Naing	20/01/2017	05/03/2019
91	EM1G-074565	Daw Ni Khin	Myin Chi Naing	20/01/2017	05/03/2019
92	EM1G-075044	U Khin Soe	Myin Chi Naing	20/01/2017	05/03/2019
93	EM1G-075731	Daw Aye Mon	Myin Chi Naing	20/01/2017	05/03/2019
94	EM1G-076285	Daw New	Myin Chi Naing	20/01/2017	05/03/2019
95	EM1G-074409	U Myint	Myin Chi Naing	19/01/2017	05/03/2019
96	EM1G-074783	U Naing	Myin Chi Naing	19/01/2017	05/03/2019

97	EM1G-074405	U Pho Toe	Myin Chi Naing	20/01/2017	05/03/2019
98	EM1G-074427	U Zaw Lwin	Myin Chi Naing	20/01/2017	05/03/2019
99	EM1G-075372	U Kyaw Lin Oo	Kin Bag	22/02/2017	06/03/2019
100	EM1G-076125	Ma Zin Mar Win	Kin Bag	22/02/2017	06/03/2019
101	EM1G-074090	Daw Mya Thi	Kin Bag	25/02/2017	06/03/2019
102	EM1G-075738	Daw Mi Mi Maw	Kin Bag	28/02/2017	06/03/2019
103	EM1G-075906	Daw Ma Ma Lay	Kin Bag	22/02/2017	06/03/2019
104	EM1G-075969	U Htein Htein Win	Kin Bag	25/02/2017	06/03/2019
105	EM1G-074450	Daw Kathy	Kin Bag	06/06/2016	06/03/2019
106	EM1G-076091	U Kyaing	Kin Bag	22/02/2017	06/03/2019
107	EM1G-076152	Daw Mya Po	Kin Bag	28/02/2017	06/03/2019
108	EM1G-074101	Daw Tin Ngwe	Kin Bag	22/02/2017	06/03/2019
109	EM1G-075136	Daw Myint Moe	Kin Bag	22/02/2017	06/03/2019
110	EM1G-074040	Daw Ei Ei Chaw	Kin Bag	25/02/2017	06/03/2019

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. These are logical estimates of the values in the absence of this project and when households were using old three stone fires, with no aspects of the project design being implemented such as local capacity building and job creation and environmental awareness campaigns.

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

= 3.94 T/household/annum of wood was consumed, and 11920 tonnes of CO₂ was emitted due to use of three stone fires

= 3.94 T/household/annum of wood was consumed, and 11920 tonnes of CO₂ was emitted due to use of three stone fires (the value of 11920 is arrived after finding the Tonnes of CO₂ emitted per Tonne of Firewood consumed, using the values from ER formula from the methodology and values of parameters specific to this VPA. It is found out that post-intervention, each household saved 2.50 Tonnes of Firewood per year and saved 7563.6 Tonnes of CO₂ - (i), similarly, the consumption of firewood in the project scenario is 1.44 tonnes per HH/year and total project emission of 4356.4 Tonnes of CO₂ - (ii). Adding (i) & (ii) gives us the total baseline emissions = 7563.6 + 4356.44 = 11920)

= 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 2189 households out of which 1563 are applied for crediting and with the latest usage rate from monitoring tests being 96.4%, around 1506 stoves are still in use, which has improved the health and safety of around 7274 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 49% saving in time (around 59 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 2189 households out of which 1563 are applied credited and with the latest usage rate from monitoring tests being 96.4%, around 1506 stoves are still in use, which has ensured access to affordable, reliable, sustainable and modern energy for around 7274 people (Average household size = 4.83 people/HH)

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 program and until the end of this VPA period, 67 such sale agents were trained and developed, which includes 42 women.

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

The VERs from the third monitoring period claimed are 7563.6

The detailed calculations are shown as below:

EX-POST CALCULATION OF EMISSION REDUCTIONS FOR VPA 006 (GS 5662) – Third Term					
	PARAMETER	UNIT	DESCRIPTION	2018 – 2019	Source
	$N_{p,y}$	-	Number of project cookstoves of each age group operation in year y	1,563	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	96.4	Source: Usage Survey (ex-post)
	$B_{b,y}$	t/hh/a	Quantity of firewood consumed in	3.94	Source: Baseline

			baseline scenario during year y		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	27.36	
P_y	t/hh/a		Quantity of firewood that is saved in the year y	2.50	
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 per year of operation (fraction)	0.92	
$f_{NRB,y}$	-		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
$EF_{b, fuel, CO_2}$	tCO ₂ /tWood		CO ₂ emission factor of firewood that is substituted or reduced	1.747	Methodology
$EF_{b, fuel, non_CO_2}$	tCO ₂ /tWood		Non-CO ₂ 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	0.823	Source: Usage Survey (ex-post)
	%		Percent of users who also use baseline cookstove	16.04	Source: Usage Survey (ex-post)
	%		Percent of meals prepared using baseline cookstove	5.13	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)	7962	
	-		Leakage Discount Factor	0.95	
ER_y	t CO ₂		Emission reductions of the project activity in period y (max. 10,000)	7563.6	

In the project scenario, the total emissions were calculated to be 4356.4 Tonnes of CO_{2e}

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

$$ER_y = \sum_{t=0}^{xoy} N_{p,y} * P_y * U_{p,y} * (f_{NRB,y} * EF_{b, fuel, CO_2} + EF_{b, fuel, non_CO_2}) * (1 - DF_{b, Stove, y})$$

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

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

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 69 such village level awareness raising events which were attended by more than 2320 participants, of which were 55% 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

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 1563 stoves eligible for ER claim and with 96.4% usage rate, 1506 stoves are still in use, which has positively impacted the health and safety of around 7274 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 49% saving in time (around 59 mins per month) for collecting wood after using the project stove.

Project Calculations: 1506 stoves in use * 4.83 people/HH (Avg. household size) = 7274 people in total
For time savings and health impact results, please refer to VPA 006 (GS 5662) - Project Monitoring Survey Results (Third Term)'.

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 2189 households out of which 1547 are applied for crediting and with the latest usage rate from monitoring tests being 96.4%, around 1506 stoves are still in use, which has ensured access to affordable, reliable, sustainable and modern energy for around 7274 people (Average household size = 4.83 people/HH)

Project Calculations: 1506 stoves in use * 4.83 people/HH (Avg. household size) = 7274 people in total
For time savings and health impact results, please refer to VPA 006 (GS 5662) - Project Monitoring Survey Results (Third Term)'.

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, 67 sale agents were trained and developed, which includes 42 women.

Project Calculations: Values derived from the 'VPA 006 (GS 5662) - Project Tracking File (Third Term)'.

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

Gold Standard®

a) Baseline Scenario = Around 3.94 Tonnes of Wood was consumed per household per year and about 12131 Tonnes of CO₂ 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 006 (GS 5662) - Baseline Survey Report'.

b) Project Scenario (& the net benefit) = Around 2.51 Tonnes of firewood is saved per year per household and the VERs claimed by this VPA in third monitoring period are 7563.6 VERs during the third 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 69 such village level awareness raising events which were attended by more than 2320 participants, of which 55% are women.

Project Calculations: Please refer to 'VPA 006 (GS 5662) - Ex Post Emission Reductions Sheet (Third Term)' for ER calculations. The values of awareness raising events are derived from the 'VPA 006 (GS 5662) - Project Tracking File (Third Term)'.

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	1506 ICS in use 7274 people impacted positively on health and safety and 49% saving in time for collecting firewood	1506 ICS in use 7274 people impacted positively on health and safety and 49% saving in time for collecting firewood
SDG 7	0 households benefited with an ICS	1506 households benefited and have a working ICS	1506 households benefited and have a working ICS
SDG 8	0 local jobs created	67 local sale agents trained and developed	67 local sale agents trained and developed
SDG 13	3.94 Tonnes of Wood consumed per household per year 11920 tCO ₂ emitted by all household in the VPA per year	1.43 Tonnes of Wood consumed per household per year 4356.4 tCO ₂ emitted by all household in the VPA per year 0 village level awareness events conducted attended by 0 participants	2.50 Tonnes of Wood consumed per household per year 7563.6 tCO ₂ saved 69 village level awareness events conducted attended by 2320 participants

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
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SDG 3	Around 10000 people	7274 people impacted positively on health and safety, and 49% saving in time for collecting firewood
SDG 7	Energy efficient cookstoves in Myanmar, an LDC	1563 households (eligible for crediting) received Energy efficient cookstoves in Myanmar, an LDC, and 1506 in use.
SDG 8	67 local sale agents trained and developed	67 local sale agents trained and developed
SDG 13	10000 tCO _{2e} saved + 600 village level awareness events conducted attended by more than 20000 participants	7563.6 tCO _{2e} saved + 69 village level awareness events conducted attended by 2320 participants

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

>> Most values were tracked from the project tracking sheet (for SDG 3, 8 and 13) during the PDD design itself as it was retroactive. The difference in VERs is due to change in parameters of usage rate, and leakage discount factor, and the less number of stoves applied for final crediting in VPA

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. The local stakeholders who do not have access to phone numbers/mobile numbers had the contact details of the local sale agent, who is from their village, and the local implementation partner staff who visits these places on a regular basis. Any on-going comment/grievances, if there are any, reaches the PD via this channel. However, during this monitoring period, no such inputs/grievances were received.

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 third monitoring period.

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

Not Applicable.