

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	V 1.0 on 25 th January 2019 (Second Monitoring Period)
Completion date of the monitoring report	V 5.0 (on 13 th June 2019) V 4.0 (on 14 th May 2019)V 3.0 (on 9 th April 2019) V 2.0 (on 11 th February 2019) V 1.0 (on 25 th January 2019)
Date of project design certification	24/11/2017 (Validated on)
Start date of crediting period	01 st May 2016
Duration of this monitoring period	01/05/2017 - 30/04/2018 – Duration of this monitoring period.
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)	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.

<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, which includes almost 40% women. However, between the start and end dates of this VPA stove distribution period, 67 such sale agents were selected, 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 oh which 1563 are applied for crediting and 1547 in use and has improved the health and safety of around 7472 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</p>

	<p>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 second issuance, this VPA generated 7813 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>01st May 2017</td> <td>31st December 2017</td> <td>5209</td> </tr> <tr> <td>01st Jan 2018</td> <td>30th April 2018</td> <td>2604</td> </tr> <tr> <td>Total</td> <td></td> <td>7813</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 during 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 st May 2017	31 st December 2017	5209	01 st Jan 2018	30 th April 2018	2604	Total		7813
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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 May 2018, the project has covered more than 1000 villages in Mandalay Region in central part of Myanmar. The coordinated action by the three actors in this project has been successful in distributing over 20,000 fuel efficient stoves which have improved the lives of more than 100,000 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.

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

Date of first stove sale & start date of the project activity = 01st May 2016 (to 28th Feb 2017)

Start date of crediting period = 01st May 2016

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First project monitoring exercise performed on: 16th March to 23rd March 2018, results to be applied to the crediting periods from:

01/05/2016 - 30/04/2017 – Retroactive Crediting Year 1, **and for this report, the second monitoring period dates are:**

01/05/2017 – 30/04/2018

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.)

Date of first stove sale & start date of the project activity = 01st May 2016 (to 28th Feb 2017)

Start date of crediting period = 01st May 2016

First project monitoring exercise performed on: 16th March to 23rd March 2018, results to be applied to the crediting periods from:

01/05/2016 - 30/04/2017 – Retroactive Crediting Year 1, &

01/05/2017 – 30/04/2018 – Annual Monitoring Year 2

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 99% 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.)*

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.

B.2.2. Corrections

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

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.

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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

>>

The start of the stove distribution under this VPA was on 01st May 2016 and the distribution ended on 28th February 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.

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

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 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.
- 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 16th March to 23rd March 2018. During this period, 110 household face to face surveys were conducted in a total of 10 villages under this VPA. These villages are Tha Man Kan (S), Ma Gyi Kine, Ta Lin Gyi, Kin Bag, Shwe Total Kone, Myaing Thar, Nga Zin Yine, Taung Kine, Sapar Twin, Hta Naung Kine Kone.

- 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</p>

		Other Language from London Teacher Training College, UK.
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 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	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	99%
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 will be selected for follow-up by the monitoring and evaluation team. A combination of household visits and phone calls 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 006 (GS5662) End User Database 3.0
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
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	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	0.0038 %
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 7472 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

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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 this VPA period.
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. During this VPA period, 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.

The list of households which were surveyed is as follows:

SurveyNo	Stove Serial Number	Household Owner Name	Village Name	Date of Purchase of FES	Date of Survey
1	EM1G-065513	U Thein Myint	Tha Man Kan (S)	13-05-2016	16-03-2018
2	EM1G-065530	U Tin Myint	Tha Man Kan (S)	13-05-2016	16-03-2018
3	EM1G-065352	U Kyaw Thu	Tha Man Kan (S)	22-05-2016	16-03-2018
4	EM1G-065524	Daw Khin Mar	Tha Man Kan (S)	13-05-2016	16-03-2018
5	EM1G-065528	U Zaw Min Aye	Tha Man Kan (S)	07-08-2016	16-03-2018

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6	EM1G-067992	U Paw San	Tha Man Kan (S)	13-06-2016	16-03-2018
7	EM1G-066457	U Win Maung	Tha Man Kan (S)	01-06-2016	16-03-2018
8	EM1G-065563	Daw Nyo	Tha Man Kan (S)	25-05-2016	16-03-2018
9	EM1G-065292	U Kyaw Aung	Tha Man Kan (S)	13-05-2016	16-03-2018
10	EM1G-074985	U Thaug Myint	Ma Gyi Kine	22-02-2017	21-03-2018
11	EM1G-074530	U Myo Thu	Ma Gyi Kine	22-02-2017	21-03-2018
12	EM1G-076139	U Htein Win	Ma Gyi Kine	22-02-2017	21-03-2018
13	EM1G-074631	U Min Aung	Ma Gyi Kine	22-02-2017	21-03-2018
14	EM1G-076185	U Khing Soe	Ma Gyi Kine	22-02-2017	21-03-2018
15	EM1G-076316	U Aye Wun	Ma Gyi Kine	22-02-2017	21-03-2018
16	EM1G-076156	U Than Naing Lin	Ma Gyi Kine	22-02-2017	21-03-2018
17	EM1G-074862	U Than Tun	Ma Gyi Kine	22-02-2017	21-03-2018
18	EM1G-076073	U Ye Tun	Ma Gyi Kine	22-02-2017	21-03-2018
19	EM1G-074854	U Zaw Myo Win	Ma Gyi Kine	22-02-2017	21-03-2018
20	EM1G-076086	Daw Thae	Ma Gyi Kine	22-02-2017	21-03-2018
21	EM1G-076121	Daw Tin New	Ma Gyi Kine	22-02-2017	21-03-2018
22	EM1G-075997	U Theit Soe	Ta Lin Gyi	23-02-2017	23-03-2018
23	EM1G-076052	U Toe	Ta Lin Gyi	23-02-2017	23-03-2018
24	EM1G-074736	Daw New	Ta Lin Gyi	24-02-2017	23-03-2018

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25	EM1G-074076	Daw Soe Soe Aye	Ta Lin Gyi	23-02-2017	23-03-2018
26	EM1G-076092	Daw A Mar	Ta Lin Gyi	23-02-2017	23-03-2018
27	EM1G-076265	U Thein Soe	Ta Lin Gyi	23-02-2017	23-03-2018
28	EM1G-075360	U Naing Moe	Ta Lin Gyi	24-02-2017	23-03-2018
29	EM1G-075934	Ma Thale Thale Win	Ta Lin Gyi	24-02-2017	23-03-2018
30	EM1G-075049	Ma Myoe Thandar	Ta Lin Gyi	23-02-2017	23-03-2018
31	EM1G-075406	U Thin	Ta Lin Gyi	23-02-2017	23-03-2018
32	EM1G-074415	U Sin Ma	Ta Lin Gyi	24-02-2017	23-03-2018
33	EM1G-075747	Daw Aye Aye Thein	Ta Lin Gyi	23-02-2017	23-03-2018
34	EM1G-074733	U Nyi Nyi Lwin	Kin Bag	22-02-2017	22-03-2018
35	EM1G-074573	U Wai Tun	Kin Bag	25-02-2017	22-03-2018
36	EM1G-075380	Daw Khin Mar Win	Kin Bag	22-02-2017	22-03-2018
37	EM1G-074435	U Tun Tun Naing	Kin Bag	25-02-2017	22-03-2018
38	EM1G-075136	U Tin Mg Htay	Kin Bag	22-02-2017	22-03-2018
39	EM1G-076091	Daw Nu Nu Ye	Kin Bag	22-02-2017	22-03-2018
40	EM1G-075906	Daw Su Su Win	Kin Bag	22-02-2017	22-03-2018
41	EM1G-074848	Daw Mar Ye	Kin Bag	25-02-2017	22-03-2018
42	EM1G-074101	U Nu	Kin Bag	22-02-2017	22-03-2018
43	EM1G-075646	Daw Aye Thein	Kin Bag	28-02-2017	22-03-2018

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44	EM1G-075969	U Htein Htein Win	Kin Bag	25-02-2017	22-03-2018
45	EM1G-074542	U Naw Sai Aung	Kin Bag	22-02-2017	22-03-2018
46	EM1G-075618	U Than	Shwe Totel Kone	25-10-2016	16-03-2018
47	EM1G-075478	U Myint	Shwe Totel Kone	16-10-2016	16-03-2018
48	EM1G-075658	U Kyaw Moe	Shwe Totel Kone	16-10-2016	16-03-2018
49	EM1G-075633	U Kyaw Htiak	Shwe Totel Kone	25-10-2016	16-03-2018
50	EM1G-074687	Daw Yin Nu	Shwe Totel Kone	16-10-2016	16-03-2018
51	EM1G-076016	Daw Mya Shwe	Shwe Totel Kone	16-10-2016	16-03-2018
52	EM1G-074383	U Naing Lin	Shwe Totel Kone	16-10-2016	16-03-2018
53	EM1G-075196	U Kyaw Aung	Shwe Totel Kone	16-10-2016	16-03-2018
54	EM1G-074332	Daw Hla Mal	Shwe Totel Kone	16-10-2016	16-03-2018
55	EM1G-074156	Daw Mar Mar San	Myaing Thar	27-02-2017	20-03-2018
56	EM1G-076248	Daw Eu	Myaing Thar	27-02-2017	20-03-2018
57	EM1G-074143	Daw Kyi Kyi Nu	Myaing Thar	23-02-2017	20-03-2018
58	EM1G-075035	Daw Sein Aye	Myaing Thar	24-02-2017	20-03-2018
59	EM1G-075893	Daw Khin Than Shwe	Myaing Thar	26-02-2017	20-03-2018
60	EM1G-074074	Daw Than Tin Win	Myaing Thar	23-02-2017	20-03-2018

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61	EM1G-075115	Daw Thin Thin Khing	Myaing Thar	26-02-2017	20-03-2018
62	EM1G-075812	Daw Khin Win	Myaing Thar	25-02-2017	20-03-2018
63	EM1G-074765	Daw Mar Moe	Myaing Thar	24-02-2017	20-03-2018
64	EM1G-075103	Daw Sein Sein New	Myaing Thar	23-02-2017	20-03-2018
65	EM1G-075052	U Min	Myaing Thar	26-02-2017	20-03-2018
66	EM1G-075422	Daw San Hla	Myaing Thar	24-02-2017	20-03-2018
67	EM1G-074513	Daw Yi Win	Nga Zin Yine	26-01-2017	21-03-2018
68	EM1G-074846	Daw Tin Than	Nga Zin Yine	25-01-2017	21-03-2018
69	EM1G-074015	Daw Aye San	Nga Zin Yine	25-01-2017	21-03-2018
70	EM1G-075325	U Kyaw Sain	Nga Zin Yine	18-01-2017	21-03-2018
71	EM1G-074972	Daw Wai Aung	Nga Zin Yine	18-01-2017	21-03-2018
72	EM1G-074835	Daw Aye Maw	Nga Zin Yine	25-01-2017	21-03-2018
73	EM1G-074853	Daw Zin Mar Oo	Nga Zin Yine	25-01-2017	21-03-2018
74	EM1G-074016	U Myint Oo	Nga Zin Yine	22-01-2017	21-03-2018
75	EM1G-075254	Daw Lan	Nga Zin Yine	23-02-2017	21-03-2018
76	EM1G-076218	U Win Oo	Nga Zin Yine	29-01-2017	21-03-2018
77	EM1G-075786	U Myo Myo	Taung Kine	23-02-2017	22-03-2018
78	EM1G-074009	U Wai Phyo Aung	Taung Kine	24-02-2017	22-03-2018

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79	EM1G-075257	U Myint Iwin	Taung Kine	24-02-2017	22-03-2018
80	EM1G-075400	Daw Yin	Taung Kine	25-02-2017	22-03-2018
81	EM1G-075062	U Kyaw Mg	Taung Kine	23-02-2017	22-03-2018
82	EM1G-074966	U Myint Moe	Taung Kine	23-02-2017	22-03-2018
83	EM1G-074576	U Myint Aung	Taung Kine	24-02-2017	22-03-2018
84	EM1G-074963	Daw Than Yin	Taung Kine	23-02-2017	22-03-2018
85	EM1G-074116	U Hla Ohm	Taung Kine	23-02-2017	22-03-2018
86	EM1G-075792	U Aye Ko	Taung Kine	23-02-2017	22-03-2018
87	EM1G-076041	Daw Cho	Taung Kine	28-02-2017	22-03-2018
88	EM1G-075773	Daw Yu Yu	Taung Kine	28-02-2017	22-03-2018
89	EM1G-076279	Daw Chaw Su	Sapar Twin	24-02-2017	20-03-2018
90	EM1G-074160	Daw Than Than Aye	Sapar Twin	24-02-2017	20-03-2018
91	EM1G-074459	Daw Mi Khing	Sapar Twin	24-02-2017	20-03-2018
92	EM1G-074866	Daw Lone Yin	Sapar Twin	24-02-2017	20-03-2018
93	EM1G-076234	Daw Khin May Si	Sapar Twin	23-02-2017	20-03-2018
94	EM1G-075057	Daw Phyu Phyu Khing	Sapar Twin	24-02-2017	20-03-2018
95	EM1G-075328	Daw Hla Hla	Sapar Twin	24-02-2017	20-03-2018
96	EM1G-074879	Daw Khin Mar Than	Sapar Twin	24-02-2017	20-03-2018
97	EM1G-075578	Daw Htay Yi	Sapar Twin	23-02-2017	20-03-2018
98	EM1G-075111	Daw Phyu Thae	Sapar Twin	24-02-2017	20-03-2018
99	EN1G-076303	Daw Khin Thandar	Hta Naung Kine Kone	24-01-2017	19-03-2018
100	EM1G-076244	U Aung Win	Hta Naung Kine Kone	26-02-2017	19-03-2018

101	EM1G-075782	Ma Khin Mar Oo	Hta Naung Kine Kone	24-01-2017	19-03-2018
102	EM1G-074845	Ko Soe	Hta Naung Kine Kone	24-01-2017	19-03-2018
103	EM1G-074811	Daw San	Hta Naung Kine Kone	25-01-2017	19-03-2018
104	EM1G-075290	Daw Mya	Hta Naung Kine Kone	25-01-2017	19-03-2018
105	EM1G-075278	U Hla Ngwe	Hta Naung Kine Kone	25-01-2017	19-03-2018
106	EM1G-074875	Daw Tin Thaug	Hta Naung Kine Kone	26-01-2017	19-03-2018
107	EM1G-074049	U Zaw Mi Naing	Hta Naung Kine Kone	24-01-2017	19-03-2018
108	EM1G-074028	U Zaw Min Tun	Hta Naung Kine Kone	24-01-2017	19-03-2018
109	EM1G-074502	Daw Cho Thae	Hta Naung Kine Kone	26-01-2017	19-03-2018
110	EM1G-074841	Daw Sandar Win	Hta Naung Kine Kone	26-01-2017	19-03-2018

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 12264 tonnes of CO₂ was emitted due to use of three stone fires (the value of 12264 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 2.53 Tonnes of Firewood per year and saved 7813 Tonnes of CO₂ - (i), similarly,

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the consumption of firewood in the project scenario is 1.43 tonnes per HH/year and total project emission of 4451 Tonnes of CO₂ - (ii). Adding (i) & (ii) gives us the total baseline emissions = 7813 + 4451 = 12264 = 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 99%, around 1547 stoves are still in use, which has improved the health and safety of around 7472 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 34% saving in time (around 68 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 99%, around 1547 stoves are still in use, which has ensured access to affordable, reliable, sustainable and modern energy for around 7472 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 claimed by this VPA, are 7773 VERs during the first issuance from the first monitoring period.

The VERs from the second monitoring period claimed are 7813.

The detailed calculations are shown as below:

EX-POST CALCULATION OF EMISSION REDUCTIONS FOR VPA 006 (GS 5662) – Second Term					
	PARAMETER	UNIT	DESCRIPTION	2017 – 2018	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	99	Source: Usage Survey (ex-post)
$B_{b,y}$	t/hh/a	Quantity of firewood consumed in baseline scenario during year y	3.94	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	27.64	
P_y	t/hh/a	Quantity of firewood that is saved in the year y	2.51	
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)	0.93	
$f_{NRB,y}$	-	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
$EF_{b, fuel, CO2}$	tCO ₂ /tWood	CO ₂ emission factor of firewood that is substituted or reduced	1.747	Methodology
$EF_{b, fuel, non_CO2}$	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	0.38	Source: Usage Survey (ex-post)
	%	Percent of users who also use baseline cookstove	0.92	Source: Usage Survey (ex-post)
	%	Percent of meals prepared using baseline cookstove	0.41	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)	8224	
	-	Leakage Discount Factor	0.95	
ER_y	t CO ₂	Emission reductions of the project activity in period y (max. 10,000)	7813	

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

$$ER_y = \sum_{t=0}^{xoy} N_{p,y} * P_y * U_{p,y} * (f_{NRB,y} * EF_{b, fuel, CO2} + EF_{b, fuel, non_CO2}) * (1 - DF_{b, Stove, y})$$

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

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

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 99% usage rate, 1547 stoves are still in use, which has positively impacted the health and safety of around 7472 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 34% saving in time (around 68 mins per month) for collecting wood after using the project stove.

Project Calculations: 1547 stoves in use * 4.83 people/HH (Avg. household size) = 7472 people in total
For time savings and health impact results, please refer to 'VPA 006 (GS 5662) - 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 2189 households out of which 1547 are applied for crediting and with the latest usage rate from monitoring tests being 99%, around 1547 stoves are still in use, which has ensured access to affordable, reliable, sustainable and modern energy for around 7472 people (Average household size = 4.83 people/HH)

Project Calculations: 1547 stoves in use * 4.83 people/HH (Avg. household size) = 7472 people in total
For time savings and health impact results, please refer to 'VPA 006 (GS 5662) - Project Monitoring Survey Results'.

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

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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'.

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

a) Baseline Scenario = Around 3.94 Tonnes of Wood was consumed per household per year and about 12264 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 second monitoring period are 7813 VERs during the second 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 3.0' for ER calculations. The values of awareness raising events are derived from the 'VPA 006 (GS 5662) - 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	1547 ICS in use 7472 people impacted positively on health and safety and 34% saving in time for collecting firewood	1547 ICS in use 7472 people impacted positively on health and safety and 34% saving in time for collecting firewood
SDG 7	0 households benefited with an ICS	1547 households benefited and have a working ICS	1547 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 12264 tCO ₂ emitted by all household in the VPA per year	1.43 Tonnes of Wood consumed per household per year 4451 tCO ₂ emitted by all household in the VPA per year 0 village level awareness events conducted attended by 0 participants	2.51 Tonnes of Wood consumed per household per year 7813 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
SDG 3	Around 10000 people	7472 people impacted positively on health and safety, and 34% 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 1547 in use.
SDG 8	67 local sale agents trained and developed	67 local sale agents trained and developed
SDG 13	10000 tCO _{2e} saved + 69 village level awareness events conducted attended by 2320 participants	7813 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.

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 second monitoring period.

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

Not Applicable.

