

## Gold standard for the global goals Monitoring report



June 2017, version 1

<b>Title of the project</b>	GS1729 Myanmar Stoves Campaign - Soneva in Myanmar – VPA No. 007
<b>Gold Standard project id</b>	GS ID of the Activity (VPA 007) = GS 6129
<b>Version number of the monitoring report</b>	V4.0 (on 29 <sup>th</sup> October 2019) V 3.0 (on 17 <sup>th</sup> October 2019) V 2.0 (on 23 <sup>rd</sup> September 2019)V 1.0 (on 12 <sup>th</sup> August 2019)
<b>Completion date of the monitoring report</b>	V 1.0 (on 12 <sup>th</sup> August 2019)
<b>Date of project design certification</b>	14/06/2018
<b>Start date of crediting period</b>	01 <sup>st</sup> July 2017
<b>Duration of this monitoring period</b>	01/07/2018 - 30/06/2019
<b>Duration of previous monitoring period</b>	01/07/2017 – 30/06/2018
<b>Project representative(s)</b>	Soneva Foundation
<b>Host Country</b>	Republic of the Union of Myanmar
<b>Certification pathway (activity certification/impact certification)</b>	Impact Certification
<b>SDG Contributions targeted (as per approved PDD)</b>	<p>1 – SDG 3: Ensure healthy lives and promote well-being for all at all ages</p> <p>2 – SDG 7: Ensure access to affordable, reliable, sustainable and modern energy for all</p> <p>3 – SDG 8: Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all</p> <p>4 - SDG 13: Take urgent action to combat climate change and its impacts</p>
<b>Gold Standard statement/product certification sought (GSVER/ADALYs/RECs etc.)</b>	GSVER
<b>Selected methodology(ies)</b>	The Gold Standard Simplified Methodology for Efficient Cookstoves, Version 01, February 2013.

<p><b>Estimated amount of annual average certified SDG impact (as per approved PDD)</b></p>	<p><u>SDG 3: Ensure healthy lives and promote well-being for all of all ages</u></p> <p>This VPA alone serves 1953 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 to around 10,000 people, 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.</p> <p><u>SDG 13: Take urgent action to combat climate change and its impacts</u></p> <p>The VERs (second monitoring period) generated by this VPA are 10266 VERs (capped at 10,000 VERs).</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 37 such village level awareness raising events which were attended by a total of 1262 participants, 810 (65%) of which were women and 452 men (35%)</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>
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**Total amount of certified SDG impact (as per approved methodology) achieved in this monitoring period**

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

This VPA applies 1743 stoves that are eligible for crediting and with the usage rate of 98.1%, 1710 stoves are in use and has improved the health and safety of around 7684 people due to the fuel-efficient cookstove. This is in line with the Target 3.9.1, which states to reduce the number of mortality rate attributed to household and ambient air pollution

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

This VPA has brought fuel-efficient cookstove to 1710 households, thus improving the energy efficiency for their cooking practices as compared to the old, three-stone fires, in line with the Target 7.3, which states, By 2030, double the global rate of improvement in energy efficiency. It also covers the Target 7.b, which focuses on bringing technology to LDCs

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

Myanmar Stoves Campaign's project design includes selecting, training and developing the local men and women for the role of sale agents, for distribution and selling of stoves to the households. This provides these local entrepreneurs with transferable skills and income source. This is in line with the Target 8.3.1, which states, to increase the Proportion of informal employment in non-agriculture employment, by sex. During the start and end of the stove distribution period in this VPA, 46 such jobs were created. (Source: VPA 007 (GS 6129) Second Term - Project Tracking File)

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

During the second monitoring period, this VPA generated 7997 VERs. The vintage break is as follows:

From	To	VERs
01-Jul-18	31-Dec-18	3998.5
01-Jan-19	30-Jun-19	3998.5
<b>Total</b>		<b>7997</b>

In addition to this, in line with Target 13.3, states, to improve education, awareness-raising and human and institutional capacity on climate change mitigation, adaptation, impact reduction and early warning. The Myanmar Stoves Campaign has during this VPA period, conducted 60 such village level awareness raising events which were attended by a total of 1560 participants (Source: VPA 007 (GS 6129) Second Term - Project Tracking File)

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

## 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 25,000 fuel efficient stoves which have improved the lives of more than 125,000 people.

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

Selected FES model for this VPA:



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

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

Envirofit SuperSaver GL had been selected as suitable product for local users based on the inputs from local communities and various stakeholders after they were consulted through demonstration and 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 1743 stoves for eligible crediting (1953 originally during validation in total)

Out of 1953, the following stoves were taken out from applying for verification:

- i) End User Data Missing = 9
- ii) Repeated Stove Serial Numbers = 28
- iii) Electric Stoves as Baseline Stoves = 81
- iv) Charcoal as Baseline Fuel = 48
- v) Other discrepancies = 31
- vi) Households having more than one project stoves = 13

After deducting i) to vi), 1743 stoves were selected for crediting out of 1953 stoves considered originally.

Date of first stove sale & start date of the project activity = 01st March 2017 (to 30th June 2017)

Start date of crediting period = 01st July 2017

Second project monitoring exercise performed on: 08<sup>th</sup> to 11<sup>th</sup> July 2019, results to be applied to the crediting periods from:

01/07/2018 - 30/06/2019

## 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 – 007 are majorly in the villages of, which are clearly identifiable and can be distinguished from the other VPAs.

List of Villages in VPA 007						
Myin Twin	Shwe Pauk Pin	Lashio Gyi Ward	Than Bo	Pae Khine Gyi	Hpa Yar Hla	Nyaung Wu
Naw Khme	Sauk Taw Wa(N)	Yae Myet	Aung Thar	Kan Swei	Phar Yar Lay Kone	Shwe Bon Thar
Thin Ga Tone	War Yone Pin (Man Gyi Chan)	Ah Lel Kan	Yae Lel Thaug (East)	Hnan Khin	Thint Daunk (N)	Myin Thar
Kin Bag	Hpyauk Seik Kone	No (1) Ward	Lin Kar Di Pa	Zee Phyu Kone	Lat Pan Chay Paw	Pyawt (Chin Myint Kyin)
Aung Thar	Myit Nge Ward	Ywar Thit Hpya	Yae Lel Thaug (West)	Kywe Swea	A Htet Nyan	Gwayt Gyi
Nwar Tat	Mi Chaung Tet	No (2) Ward	Hta Naung Kone	Kan Pauk Gyi	Khat Lan Kan	Htein Pan
Mae Khin Gyi	Shan Ywar Gyi	Pyaw	Ma Yoe Kone	Ohn Chaw	Mya Ga Gi Ri Ward	Out Yoe
Htan Lone Tat	Mon Taw	Let Khoke Kone	Sin Hpyu Kone	No (2) Ward	Chaung U (South) Ward	Gaung Kwe
Gway Saung	Hman Tan Ward	Nwar Shar Yoe	Nat_Gyi	Myo Thar (East)	Bo Tae Kone	Kun Thee Pain (Lay Ein Tan)
Kyauk Sa Ka Lay	Kan Gyi (East)	Pauk Myaing	Kone Lel	Moe Taung	Ywar Thit	Ya Thit
Taung Ta Lone	Nyaung Pin Thar	Inn Yin	Sat Pyar Kyin	Naung Hlaing	Oke Kyut Tann (West) Ward	Taung Khaung Pwar
Kya Swar	Thet Kei Kyin	Sin Chan	Kan Thar	Pay Taw	Kywe Tat	Kyauk Myaung
Ta Lin Gyi	Myin Thei	Bu Tar Ward	(Ga Nge) Ward	Nyaung Wun	Myin Ywar Ka Lay	Let Pan
Sapar Twin	Ta Pei	Shwe Thu Htay Ward	(Nga) Ward	Kan U	Kan Swei (East)	Nyaung Pin Wun
Zay Ywar	Pan Ya (South)	Shan Pwe Ward	(Ka Gyi) Ward	Pay Taw (Kan Pauk)	Sa Myaung	Chaung U
Mying Thar	Thit Taw Hpyar (North)	Nwar Ku Gyi	Si Thar	Myauk Kyun	Nyaung Wun (South)	Sue Lay Gone Ward
Tha Pyay Kan	Kyauk Ta Lone	Pon Nar	Pyin Si	Ah Neint	Ma Gyi Kan	
Koke Ko Kan	Ywar Bo (South)	Ywar Thar Aye	Tha Pay Thar (Middle)	Te Kone	Kyauk Kone	
Taung Kine	No (1) Ward	Kyauk Sauk	Tha Pay Thar (East)	Kyaung Phu	Myaung Char	
Souk Taw Wa	No (4) Ward	Tha Pay Thar (East)	Lay Tan	Ya Thar	Min Win	
Sauk Inn	Sin Tat	Tha_Pay_Thar_West	Ywar Thar Aye	Ma Yoe Kone	Ah Lel Kyun	

Ta Ohm	Si Kan	Kan Kwayt	Pin_Lel	Thein	Thone Ein	
Ae Bya	Kan Ma	Kone Thar	Te Gyi	Hpet Ping Aing	Kyan Tan Ward	
Ma Gyi Kine	Hpyu Twin Kone	Aye	Kyar Kan	Son	Buu Tar Ward	
Inn Kuu	Tha Yet Kan	Myin Chan Kone	Hnat Cho Taw	Ywar Thar Yar	Min Nay Kone	
Sa Kar Tae	Htan Ta Pin	Kyar Myee Swea	Kan Chaw (Ga Lant)	Koke Ke	Tha Kyin	
Moe Nan Chone	Pyin Hla Taw	Maing Maw	Thein Kone	Kyauk Tan	Let Pan Thar	
Suu Kar King	Ma Gyi Kone	Kin Sein Zay (East)	Myay Sa Kaung	Lay Ywar Son	Thin Pan Kone Ward	
Kan Gyi	Than Kone	Ta Ko Tee (North)	No (12) Ward	Hpon		
Myo Ma Ward	Tha Nat Sit	Pay Kone	Shwe Chaung	Ku		
Chan Aye Thar San Township	Na Be Pin	Wet Htein	Ma Har Myaing (1) Ward	Zee Pin Kan	No(7) Ward	
Hta Naung Pin Hla	Chin Thayt Let	Tha Ma Tan	Min Yin	Zee Taw	No(18) Ward	
Kyauk Chaw	Nga Lunt	Ta Mar Pin	Sat Pyar Kyin	Ywar Si (North)	Taung Kyun	
Aung Chan Thar	(Ga Gyi) Ward	Nat Yae Kan	Pa Da Myar Ward	Sar Khar	Kyar Taing	
Nauk Taw Par	(Kha Gway) Ward	Yae Poke	Nat Sin	Sin Gut	Hta Naung Pin Su (South)	
Nyaung Pin Thar	Chan Mya Thar Zi (South) Ward	Kyaung Kone Gyi	Mone Za Le	Kaing Taung	Kywe Chan	
Daunt Gyi Kwayt	Min Kun	Tha Pyay Thar	Pyin Pauk	Nyaung Pin	Sar Kyu	
Kyun U	Pe Chet (East)	Hpaung Ka Taw	Aye Seint	Hta Naung Taing	Ku Lar	
Kan Swei	Thar Si Lay	Nyaung Lay Pin	Ku Me	Kun Saik	Kyee Pin	
Pei Lay Se	Myet Shu	Ma_Gyi_Kyat	Si Pin	Chay Say	Thea Hphy Wa Pyi Taw Thar	
Pay Taw Gyi	Wet Lu (East)	Let Pa Kyin (South)	Tharsi lay	Myo Ma Ward	Tha Pyay Thar	
Ba Lont	Pa Kin (Nar Lin)	Let Pa Kyin (North)	Ywar Thit	Nyaung Kan	Ma Yoe Kone	
Mya Inn	Ah Lel Paing Ward	Se Yoe	Tha Phan Pin	Hpet Taw	Taw Pu	

### 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.)

Start Date of the Crediting Period as in approved PDD: 01/07/2017

Length of the crediting period is five years, renewable twice, hence 15 years in total.

## 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, 98.1% of the users have been reported to use the improved cookstoves. There have been no major deviations in this VPA as per the approved project design, apart from the change in the monitoring period dates. These are 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 1953 considered earlier during validation to 1743 total listed households, which have been considered eligible and have been applied for final verification for the second monitoring term, and the same number of stoves were applied for the first term of monitoring as well.

Out of 1953, the following stoves were taken out from applying for verification:

- i) End User Data Missing = 9
- ii) Repeated Stove Serial Numbers = 28
- iii) Electric Stoves as Baseline Stoves = 81
- iv) Charcoal as Baseline Fuel = 48
- v) Other discrepancies = 31
- vi) Households having more than one project stoves = 13

After deducting i) to vi), 1743 stoves were selected for crediting out of 1953 stoves considered originally.

#### B.2.2. Corrections

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

- i) Same as B.2.1
- ii) The monitoring period was changed from: 01/03/2017 to 28/02/2018 to 01/07/2017 to 30/06/2018 during the first monitoring period . For the second monitoring period, this is: 01/07/2018 to 30/06/2019

#### 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.)

Change done during the previous first monitoring period: The dates were changed from: 01/03/2017 to 28/02/2018 to 01/07/2017 to 30/06/2018.

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

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

N.A.

**B.2.5. Changes to project design of approved project**

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

N.A.

## SECTION C. Description of monitoring system applied by the project

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The start of the stove distribution under this VPA was on 01<sup>st</sup> March 2017 and the distribution ended on 30<sup>th</sup> June 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 Sale<sup>1</sup>
- Model/type of project technology sold:
- Serial/ID number of the device
- Name and telephone number (if available) of end-users
- Application of device (type of end use: Commercial/Domestic)
- Address/ Location of end-users<sup>2</sup>

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.

<sup>1</sup> Date of Sale will be associated with conservative assessment as to date of installation and commencement of use of technology

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

Annual surveys for monitoring:

- Usage Survey to establish the drop-off rates in technology usage from year-1 sales and other vintages. For example, if only cookstoves in the first year of use (age0-1) are being credited, a usage parameter must be established for age-group 0-1, through a usage survey for cookstove age0-1. If cookstoves of age 0-1 and age 1-2 are being credited (as part of first request for issuance), usage parameters must be established for age-group 0-1 and 1-2, respectively through a usage survey. If cookstoves of age-group 0-1 and 1-2 are being credited (as part of second request for issuance), usage parameters must be established for age-group 1-2 only through a usage survey as the usage rate for cookstoves of age group 0-1 can be applied from the previous issuance.
- Monitoring Survey to reassess household kitchen regimes. CME and/or Implementation Partner will randomly sample households from the sales agreements received. Sampling will be representative of geographic regions and technology used. Where replacements are made, monitoring shall also ensure that the efficiency of the new cookstove is similar to the appliances being replaced. Finally, the project must also monitor the physical conditions of the cookstoves.

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 08<sup>th</sup> to 11<sup>th</sup> July 2019.

During this period, 105 household face to face surveys were conducted in a total of 11 villages under this VPA. These villages are: Hta Naung Kone, Kan Kway, Kauk Sauck, Kwae Chan, Nat Kyi, Phat Phin, Phyu Twin Kone, Pone Nar, Sa Par Twin, See Kan, Sin Phyu Kone.

- Monitoring Team:

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

Name	Designation & Role	Qualification
Bhushan Trivedi	Consultant to the Soneva Foundation on Myanmar Stoves Campaign.  Bhushan led the designing of the project monitoring survey exercise + QA/QC of data.	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.  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.
Phyo Phyo Wai	Senior Program Manager, Energy Venture Program for Mercy Corps (Myanmar)  Phyo Phyo planned the data collection, training of enumerators, supervision and QA/QC of data.	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.  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.
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)

<b>Relevant SDG Indicator</b>	SDG 13: Take urgent action to combat climate change and its impacts
<b>Data/parameter</b>	<b>EF<sub>b, fuel, CO2</sub></b>
Unit	tCO <sub>2</sub> /t firewood
Description	CO <sub>2</sub> 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.

<b>Relevant SDG Indicator</b>	SDG 13: Take urgent action to combat climate change and its impacts
<b>Data/parameter</b>	<b>EF<sub>b, fuel, non_CO2</sub></b>
Unit	tCO <sub>2</sub> /t firewood
Description	Non-CO <sub>2</sub> emission factor for use of firewood in baseline scenario
Source of data	IPCC default value, table 2.9 of chapter 2 of Vol. 2, 2006 IPCC Guidelines for National Greenhouse Gas Inventories
Value(s) applied	0.455
Choice of data or Measurement methods and procedures	Deemed valid by GS VER Methodology

Purpose of data	To calculate VERs
Additional comment	Measuring emission factors from stove technologies is costly and difficult to do accurately. The CME applies default IPCC emission values.

<b>Relevant SDG Indicator</b>	SDG 13: Take urgent action to combat climate change and its impacts
<b>Data/parameter</b>	$\eta_b$
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.

<b>Relevant SDG Indicator</b>	SDG 13: Take urgent action to combat climate change and its impacts
<b>Data/parameter</b>	$\eta_p$
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: <a href="#">Weblink</a> )
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.

<b>Relevant SDG Indicator</b>	SDG 13: Take urgent action to combat climate change and its impacts
<b>Data/parameter</b>	$f_{NRB, y}$
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 ( <a href="#">Weblink</a> )
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

<b>Relevant SDG Indicator</b>	SDG 13: Take urgent action to combat climate change and its impacts
<b>Data/parameter</b>	<b>B<sub>b,y</sub></b>
Unit	t/hh/a (tons firewood per household per annum)
Description	Quantity of firewood consumed for cooking in baseline scenario during year y
Source of data	Baseline survey
Value(s) applied	4.219
Choice of data or Measurement methods and procedures	<p>The value derived from ex-ante baseline surveys, please find the document titled, "VPA 007 (GS 6129) Second Term - Myanmar Stoves Campaign - Baseline Survey Report - March 2018". 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.

<b>Relevant SDG Indicator</b>	SDG 13: Take urgent action to combat climate change and its impacts
<b>Data/parameter</b>	<b>LE<sub>p,i,y</sub></b>
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)

<b>Relevant SDG Indicator</b>	SDG 13: Take urgent action to combat climate change and its impacts
<b>Data/parameter:</b>	$U_{p,y}$
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	98.1%
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 105 households.

<b>Relevant SDG Indicator</b>	SDG 13: Take urgent action to combat climate change and its impacts
<b>Data/parameter:</b>	$N_{p,y}$
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 007 (GS 6129) Second Term - End User Database
Value(s) of monitored parameter	1743
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.

<b>Relevant SDG Indicator</b>	SDG 13: Take urgent action to combat climate change and its impacts
<b>Data/parameter:</b>	<b>DF<sub>n</sub></b>
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	0.92 i.e., 1% efficiency loss per year.
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

<b>Relevant SDG Indicator</b>	SDG 13: Take urgent action to combat climate change and its impacts
<b>Data/parameter:</b>	<b>DF<sub>b, Stove, y</sub></b>
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	12.02 %
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:

<b>Relevant SDG Indicator</b>	SDG 3: Ensure healthy lives and promote well-being for all at all ages
<b>Data / Parameter</b>	Improvement in the indoor air quality, and health and safety of the stove users.
<b>Unit</b>	%
<b>Description</b>	Qualitative feedback from the stove users
<b>Source of data</b>	Project Survey
<b>Value(s) applied</b>	100%
<b>Measurement methods and procedures</b>	Household Surveys
<b>Monitoring frequency</b>	Annual
<b>QA/QC procedures</b>	Transparent data collection, analysis and reporting.
<b>Purpose of data</b>	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 ( <a href="#">Link</a> ), which contributes to the health and well-being by reduction of Indoor Air Pollution.
<b>Additional comment</b>	Not Applicable

<b>Relevant SDG Indicator</b>	SDG 7: Ensure access to affordable, reliable, sustainable and modern energy for all
<b>Data / Parameter</b>	Number of households served.
<b>Unit</b>	Number
<b>Description</b>	Total households and lives impacted
<b>Source of data</b>	Ongoing data collection and storage.
<b>Value(s) applied</b>	1743 eligible households in this VPA, and 7684 lives impacted.
<b>Measurement methods and procedures</b>	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.
<b>Monitoring frequency</b>	Annual
<b>QA/QC procedures</b>	Transparent data collection, analysis and reporting.
<b>Purpose of data</b>	To measure the number of households (and lives) impacted by access of a fuel-efficient cookstove.
<b>Additional comment</b>	Not Applicable

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

<b>Source of data</b>	Ongoing data collection and storage. The Project Tracking File records the number of sale agents created during each VPA.
<b>Value(s) applied</b>	46 sale agent jobs created during this VPA period.
<b>Measurement methods and procedures</b>	Ongoing, Project Tracking File
<b>Monitoring frequency</b>	Annual
<b>QA/QC procedures</b>	Transparent data collection, analysis and reporting.
<b>Purpose of data</b>	To measure the number of jobs created local men and women in the target region.
<b>Additional comment</b>	Not Applicable

<b>Relevant SDG Indicator</b>	SDG 13: Take urgent action to combat climate change and its impacts
<b>Data / Parameter</b>	Number of: i) Village Level Awareness Raising Events and ii) Attendance
<b>Unit</b>	Number
<b>Description</b>	Local awareness and sensitisation over climate/deforestation issues
<b>Source of data</b>	The Project Tracking File records the number awareness raising sessions conducted and the attendance in such meetings.
<b>Value(s) applied</b>	60 village level events attended by 1560 participants.
<b>Measurement methods and procedures</b>	Ongoing, Project Tracking File
<b>Monitoring frequency</b>	Annual
<b>QA/QC procedures</b>	Transparent data collection, analysis and reporting.
<b>Purpose of data</b>	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.
<b>Additional comment</b>	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, 60 such events were conducted, which were attended by a total of 1560 participants.

## Safeguarding Principles Assessment (SPA) Monitoring

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

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<b>Purpose of data</b>	To ensure internationally proclaimed human rights for everyone associated with this project.
<b>Additional comment</b>	Our ongoing discussions with relevant stakeholders reveals that no such incidents have been reported.

<b>Relevant SPA</b>	Safeguarding Principle 4 - Cultural heritage, Indigenous Peoples, Displacement and Resettlement
<b>Data / Parameter</b>	Project in sites, structures, or objects with historical, cultural, artistic, traditional or religious values or intangible forms of culture
<b>Unit</b>	Number
<b>Description</b>	Project being implemented in the above-mentioned site(s)
<b>Source of data</b>	Local input/records of such sites of importance
<b>Value(s) applied</b>	0
<b>Measurement methods and procedures</b>	On-going evaluation of such sites
<b>Monitoring frequency</b>	On-going
<b>QA/QC procedures</b>	Transparent data collection, analysis and reporting.
<b>Purpose of data</b>	To ensure the project does not negatively impact these kind of special sites/structures.
<b>Additional comment</b>	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

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

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 around 11 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 around 11 villages spread across the start and end dates of the stove distribution date under this VPA, and have around 9-11 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, 105 surveys were conducted out of 1743 total users, achieving a confidence level of 95%, and 9 % 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. (Ref: <https://www.surveymonkey.com/mp/margin-of-error-calculator/>)

The list of households which were surveyed is as follows:

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Survey No	Stove Number	Serial	Household Owner Name	Village Name	Date of Purchase of FES	Date of Survey	FES Still Used
1	EM1G - 077590		U Maung Kyaing	Kan Kway	06-04-2017	8.07.19	Yes
2	EM1G - 077652		U Min Aung	Kan Kway	06-04-2017	8.07.19	Yes
3	EM1G - 077130		U Aung Thwin	Kan Kway	07-04-2017	8.07.19	Yes
4	EM1G - 077684		U Tin Myint	Kan Kway	08-04-2017	8.07.19	Yes
5	EM1G - 075307		U Nan Tin	Kan Kway	02-05-2017	8.07.19	Yes
6	EM1G - 077983		U Than Naing	Kan Kway	22-05-2017	8.07.19	Yes
7	EM1G - 078066		Daw Hla Kyaing	Kan Kway	06-04-2017	8.07.19	Yes
8	EM1G - 078379		Daw Nyunt Nyunt Sein	Kan Kway	06-04-2017	8.07.19	Yes
9	EM1G - 077711		Daw Win Lwin	Kan Kway	06-04-2017	8.07.19	Yes
10	EM1G - 078504		U Kyi Sein	Phat Pin I	03-05-2017	11.07.19	Yes
11	EM1G - 077764		U Myint Lwin	Phat Pin I	03-05-2017	11.07.19	Yes
12	EM1G - 076790		Daw Khin HninThu	Phat Pin I	05-05-2017	11.07.19	Yes
13	EM1G - 078330		Daw Ei Ei Chaw	Phat Pin I	16-05-2017	11.07.19	Yes
14	EM1G - 077340		Daw Mar Mar	Phat Pin I	10-05-2017	11.07.19	Yes
15	EM1G - 077309		U Aye Ngwe	Phat Pin I	05-05-2017	11.07.19	Yes
16	EM1G - 077186		U Chit Kyi	Phat Pin I	05-05-2017	11.07.19	Yes
17	EM1G - 078618		U Hla Myint	Phat Pin I	10-05-2017	11.07.19	Yes
18	EM1G - 074014		Daw Aye Myint	Sa Par Twin	03-03-2017	9.07.19	Yes
19	EM1G - 074449		Ma Hla Kyi	Sa Par Twin	02-03-2017	9.07.19	Yes
20	EM1G - 075763		Ma Saw Win	Sa Par Twin	02-03-2017	9.07.19	Yes
21	EM1G - 074021		Ma Taw Kyi	Sa Par Twin	03-03-2017	9.07.19	Yes
22	EM1G - 075932		Ma Htay Win	Sa Par Twin	03-03-2017	9.07.19	Yes
23	EM1G - 074965		Ma Mar Oo	Sa Par Twin	04-03-2017	9.07.19	Yes
24	EM1G - 075805		Ma Mar Koe	Sa Par Twin	03-03-2017	9.07.19	Yes
25	EM1G - 076447		Daw Kyi	Phyu Kone Twin	23-03-2017	11.07.19	Yes
26	EM1G - 076868		Daw Win	Phyu Kone Twin	24-03-2017	11.07.19	Yes
27	EM1G - 076638		Daw Myint	Phyu Kone Twin	23-03-2017	11.07.19	Yes
28	EM1G - 077829		Daw Hla Poe	Phyu Kone Twin	25-03-2017	11.07.19	Yes
29	EM1G - 077363		Daw Aye Mya	Phyu Kone Twin	25-03-2017	11.07.19	Yes
30	EM1G - 076880		Daw Toe Yee	Phyu Kone Twin	22-03-2017	11.07.19	Yes

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31	EM1G - 076893	Daw Hla Ohm Mal	Phyu Kone Twin	22-03-2017	11.07.19	Yes
32	EM1G - 077271	Daw Khin Myint	Phyu Kone Twin	25-03-2017	11.07.19	Yes
33	EM1G - 078310	Daw Kyi Win	Phyu Kone Twin	22-03-2017	11.07.19	Yes
34	EM1G - 078377	U Nyo San	Hta Kone Naung	03-04-2017	10.07.19	No
35	EM1G - 077462	Daw Khin Ma	Hta Kone Naung	02-04-2017	10.07.19	Yes
36	EM1G - 077452	Daw Chit Nyein	Hta Kone Naung	02-04-2017	10.07.19	Yes
37	EM1G - 077213	U See	Hta Kone Naung	02-04-2017	10.07.19	Yes
38	EM1G - 077844	Daw Zaw	Hta Kone Naung	02-04-2017	10.07.19	Yes
39	EM1G - 077440	U Aye Tun	Hta Kone Naung	02-04-2017	10.07.19	Yes
40	EM1G - 077705	U Tin Nyein	Hta Kone Naung	02-04-2017	10.07.19	Yes
41	EM1G - 076490	Daw Sein Htay	Hta Kone Naung	04-04-2017	10.07.19	Yes
42	EM1G - 076413	U Than Win	Hta Kone Naung	02-04-2017	10.07.19	Yes
43	EM1G - 077400	Daw Pa Pa	See Kan	11-04-2017	9.07.19	Yes
44	EM1G - 077385	Daw Myint	See Kan	10-04-2017	9.07.19	Yes
45	EM1G - 077911	Daw Myint Htay	See Kan	10-04-2017	9.07.19	Yes
46	EM1G - 076860	Daw May Win	See Kan	06-04-2017	9.07.19	Yes
47	EM1G - 077667	Daw Kyi Sein	See Kan	28-03-2017	9.07.19	No
48	EM1G - 076879	Daw Lwin Mar	See Kan	16-05-2017	9.07.19	Yes
49	EM1G - 076514	Daw Swe Swe Myint	See Kan	11-04-2017	9.07.19	Yes
50	EM1G - 078436	Daw Su	See Kan	10-04-2017	9.07.19	Yes
51	EM1G - 077898	Daw San Yin	See Kan	10-04-2017	9.07.19	Yes
52	EM1G - 077886	Daw Kyu	See Kan	27-03-2017	9.07.19	Yes
53	EM1G - 077546	Daw Than Swe	See Kan	16-05-2017	9.07.19	Yes
54	EM1G - 076909	Daw Khin Saw Win	Sin Phyu Kone	05-04-2017	10.07.19	Yes
55	EM1G - 076396	Daw San San Oo	Sin Phyu Kone	06-04-2017	10.07.19	Yes
56	EM1G - 076510	U Aung Mu	Sin Phyu Kone	29-04-2017	10.07.19	Yes
57	EM1G - 078464	Daw Aye Aye Maw	Sin Phyu Kone	06-04-2017	10.07.19	Yes
58	EM1G - 076481	Daw Kyu Mar	Sin Phyu Kone	10-04-2017	10.07.19	Yes
59	EM1G - 076453	Daw Mya Paing	Sin Phyu Kone	06-04-2017	10.07.19	Yes
60	EM1G - 076633	Daw Yin Yin Htay	Sin Phyu Kone	05-04-2017	10.07.19	Yes
61	EM1G - 076492	Daw Htar	Sin Phyu Kone	31-03-2017	10.07.19	Yes
62	EM1G - 076867	Daw Shwe Man	Sin Phyu Kone	05-04-2017	10.07.19	Yes
63	EM1G - 077540	Daw Than Nu	Sin Phyu Kone	29-03-2017	10.07.19	Yes
64	EM1G - 076547	Daw Me Me Latt	Nat Kyi	18-04-2017	10.07.19	Yes
65	EM1G - 077223	Daw Thae Thae Lwin	Nat Kyi	11-05-2017	10.07.19	Yes
66	EM1G - 078340	U Aung Ko Latt	Nat Kyi	01-04-2017	10.07.19	Yes
67	EM1G - 076516	Daw Htay Htay	Nat Kyi	25-05-2017	10.07.19	Yes

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68	EM1G - 076987	Daw Saung	Nat Kyi	18-04-2017	10.07.19	Yes
69	EM1G - 077573	Daw Nu	Nat Kyi	18-04-2017	10.07.19	Yes
70	EM1G - 076624	Daw San San Htay	Nat Kyi	24-05-2017	10.07.19	Yes
71	EM1G - 076676	Daw Nyein Kyi	Nat Kyi	24-05-2017	10.07.19	Yes
72	EM1G - 077918	Daw Mar Aye	Nat Kyi	01-05-2017	10.07.19	Yes
73	EM1G - 077902	U Aye Myint	Nat Kyi	29-04-2017	10.07.19	Yes
74	EM1G - 077930	Daw Thandar Oo	Nat Kyi	18-04-2017	10.07.19	Yes
75	EM1G - 077827	Daw Zin Mar Nawe	Nat Kyi	19-06-2017	10.07.19	Yes
76	EM1G - 078572	Daw Wah	Kauk Sauck	01-04-2017	8.07.19	Yes
77	EM1G - 076733	Daw Tin Nu	Kauk Sauck	01-04-2017	8.07.19	Yes
78	EM1G - 077490	Daw Pyae	Kauk Sauck	01-04-2017	8.07.19	Yes
79	EM1G - 078378	U Nyunt Swe	Kauk Sauck	16-05-2017	8.07.19	Yes
80	EM1G - 077455	Daw Khin Ma Ma	Kauk Sauck	01-04-2017	8.07.19	Yes
81	EM1G - 077037	Daw Wai	Kauk Sauck	01-04-2017	8.07.19	Yes
82	EM1G - 077696	U Zaw Win	Kauk Sauck	01-04-2017	8.07.19	Yes
83	EM1G - 077448	Daw Ohmar Nyunt	Kauk Sauck	01-04-2017	8.07.19	Yes
84	EM1G - 077762	Daw Than	Pone Nar	30-04-2017	8.07.19	Yes
85	EM1G - 078246	U Kyaw Aye	Pone Nar	30-04-2017	8.07.19	Yes
86	EM1G - 076603	Daw Ni	Pone Nar	30-04-2017	8.07.19	Yes
87	EM1G - 077152	Daw Swe	Pone Nar	30-04-2017	8.07.19	Yes
88	EM1G - 072296	Daw Mar Aye	Pone Nar	30-04-2017	8.07.19	Yes
89	EM1G - 077675	Daw Thidar Aye	Pone Nar	30-04-2017	8.07.19	Yes
90	EM1G - 077337	Daw Phyu	Pone Nar	30-04-2017	8.07.19	Yes
91	EM1G - 078187	Daw Hla Kyi	Pone Nar	30-04-2017	8.07.19	Yes
92	EM1G - 077442	Daw Aye	Pone Nar	30-04-2017	8.07.19	Yes
93	EM1G - 077217	Daw Ohme Hlaing	Pone Nar	30-04-2017	8.07.19	Yes
94	EM1G - 077763	Daw Nyo	Kwae Chan	16-06-2017	11.07.19	Yes
95	EM1G - 078585	U Sein Win	Kwae Chan	22-05-2017	11.07.19	Yes
96	EM1G - 078593	U Aung Moe	Kwae Chan	24-05-2017	11.07.19	Yes
97	EM1G - 077124	Daw Kyi Sein	Kwae Chan	28-05-2017	11.07.19	Yes
98	EM1G - 076606	Daw Khin Kyi	Kwae Chan	25-04-2017	11.07.19	Yes
99	EM1G - 076850	U Kyaw	Kwae Chan	25-04-2017	11.07.19	Yes
100	EM1G - 076839	U Aye Maw	Kwae Chan	16-06-2017	11.07.19	Yes
101	EM1G - 076575	Daw San Htay	Kwae Chan	30-05-2017	11.07.19	Yes
102	EM1G - 076586	Daw Kyin Aye	Kwae Chan	30-05-2017	11.07.19	Yes
103	EM1G - 076779	U Than Tun	Kwae Chan	30-05-2017	11.07.19	Yes
104	EM1G - 078528	U Than Maung	Kwae Chan	25-05-2017	11.07.19	Yes
105	EM1G - 078137	U Kyaw Thu	Kwae Chan	25-05-2017	11.07.19	Yes

## SECTION E. Calculation of SDG outcomes

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

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

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

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

= The households in this VPA were exposed to negative impacts from using three stone fire and constraint on productivity due to more time (and money) was spent on collecting firewood.

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

= The households in this VPA did not have access to an improved cookstove prior to this project.

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

= 0 local jobs created of the nature included in this project design.

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

= 4.2 T/household/annum of wood was consumed, and 14160 tonnes of CO<sub>2</sub> was emitted due to use of three stone fires

= 0 environmental awareness sessions were organised

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

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

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

This VPA alone applied for 1743 stoves eligible for crediting and with the latest usage rate from monitoring tests being 98.1%, around 1710 stoves are still in use, which has improved the health and safety of around 7684 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. 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 60% saving in time (around 72 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 1743 households that are applied credited and with the latest usage rate from monitoring tests being 98.1%, around 1710 stoves are still in use, which has ensured access to affordable, reliable, sustainable and modern energy for around 7684 people

#### 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, 46 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 7997 VERs during the second issuance. The detailed VER calculations are shown as below:

EX-POST CALCULATION OF EMISSION REDUCTIONS FOR VPA 007 (GS 6129)					
	PARAMETER	UNIT	DESCRIPTION	2018-19	Source
	$N_{p,y}$	-	Number of project cookstoves of each age group operation in year $y$	1,743	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	98.1	Source: Usage Survey (ex-post)
	$B_{b,y}$	t/hh/a	Quantity of firewood consumed in baseline scenario during year $y$	4.22	Source: Baseline Survey
	$\eta_b$	%	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	<b>Quantity of firewood that is saved in the year <math>y</math></b>	<b>2.69</b>	
	$\eta_p$	%	Efficiency of project cookstove (fraction) determined at the start of the project activity	29.7	
	$DF_{\eta}$	-	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
	$EF_{b, fuel, CO2}$	tCO <sub>2</sub> /tWood	CO <sub>2</sub> emission factor of firewood that is substituted or reduced	1.747	Methodology
	$EF_{b, fuel, non\_CO2}$	tCO <sub>2</sub> /tWood	Non-CO <sub>2</sub> 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	12.02	Source: Usage Survey (ex-post)
		%	Percent of users who also use baseline cookstove	28.16	Source: Usage Survey (ex-post)
		%	Percent of meals prepared using baseline cookstove	12.02	Source: Usage Survey (ex-post)
	$x$	-	$y-1$		
	$y$	-	Year of the crediting period		
		t CO <sub>2</sub>	<b>Emission reductions of the project activity in period <math>y</math> (max. 10,000)</b>	<b>8418</b>	
		-	<b>Leakage Discount Factor</b>	<b>0.95</b>	

<b>ERy</b>	† CO <sub>2</sub>	<b>Emission reductions of the project activity in period y (max. 10,000)</b>	<b>7997</b>	
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The vintage breakdown of the ER is as follows:

From	To	VERs
01-Jul-18	31-Dec-18	3998.5
01-Jan-19	30-Jun-19	3998.5
<b>Total</b>		<b>7997</b>

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

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

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

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

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 more than 60 such village level awareness raising events which were attended by more than 1560 participants, of which were 1049 were females.

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

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

>>

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

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

Baseline Calculations: 0 household/people.

b) Project Scenario (& the net benefit) = The project has 1743 stove eligible for ER claim and with 98.1% usage rate, 1710 stoves are still in use, which has positively impacted the health and safety of around 7684 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 60% saving in time (around 72 mins per month) for collecting wood after using the project stove.

### 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 1743 households that are applied for crediting and with the latest usage rate from monitoring tests being 98.1%, around 1710 stoves are still in use, which has ensured access to affordable, reliable, sustainable and modern energy for around 7684 people

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

Project Calculations: Values derived from the 'VPA 007 (GS 6129) Second Term - Project Tracking File'.

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

a) Baseline Scenario = Around 4.2 Tonnes of Wood was consumed per household per year and about 14332 Tonnes of CO<sub>2</sub> 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 007 (GS 6129) Second Term - Baseline Survey Report'

b) Project Scenario (& the net benefit) = Around 2.67 Tonnes of firewood is saved per year per household and the VERs claimed by this VPA, are 7997 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 60 such village level awareness raising events which were attended by more than 1560 participants, of which 1049 were females.

Project Calculations: Please refer to 'VPA 007 (GS 6129) Second Term - Ex Post Emission Reductions Sheet' for ER calculations. The values of awareness raising events are derived from the 'VPA 007 (GS 6129) Second Term - 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	1710 ICS in use 7684 people impacted positively on health and safety and 60% saving in time for collecting firewood	1710 ICS in use 7684 people impacted positively on health and safety and 60% saving in time for collecting firewood
SDG 7	0 households benefited with an ICS	1710 households benefited and have a working ICS	1710 households benefited and have a working ICS
SDG 8	0 local jobs created	46 local sale agents trained and developed	46 local sale agents trained and developed
SDG 13	4.2 Tonnes of Wood consumed per household per year  12613 tCO <sub>2</sub> emitted by all household in the VPA per year	1.54 Tonnes of Wood consumed per household per year  4616 tCO <sub>2</sub> emitted by all household in the VPA per year  0 village level awareness events conducted attended by 0 participants	2.67 Tonnes of Wood saved per household per year  7997 tCO <sub>2e</sub> saved  60 village level awareness events conducted attended by 1560 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 10,000 people impacted positively on health and safety,	7684 people impacted positively on health and safety, and 60% saving in time for collecting firewood
SDG 7	1953 households receiving Energy efficient cookstoves in Myanmar, an LDC	1743 households (eligible for crediting) received Energy efficient cookstoves in Myanmar, an LDC, and 1710 in use after year 2
SDG 8	410 local sale agents trained and developed (estimate of from start of project till around validation)	46 local sale agents trained and developed
SDG 13	10266 tCO <sub>2e</sub> saved + 37 village level awareness events conducted attended by 1262 participants	7997 tCO <sub>2e</sub> saved + 60 village level awareness events conducted attended by 1560 participants

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

>> For SDG 3, the number of people impacted is less in monitoring period due to less number of stoves being applied for crediting and drop in usage rate. The same applies for SDG 7 & SDG 13 for the ER calculations.

## **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.

