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GOLD STANDARD MONITORING REPORT
Version 2, 05/01/2017

IMPROVED COOKING STOVES FOR NIGERIA PROGRAMME OF ACTIVITIES
UNFCCC Ref. Nr. 5067-0001, GS Ref. 1162

Monitoring Period: 01/07/2014-30/06/2015 (both days included)

For CDM monitoring please refer to the CDM Monitoring Report. The technology disseminated under this CPA is the Save80 cookstove.

Total emission reductions achieved in this monitoring period: 8,018 t of CO₂e
of which:

2014 vintage: 4,042 t of CO₂e

2015 vintage: 3,976 t of CO₂e

Registration reference number and registration date of PoA and each CPAs included in the Gold Standard registration

	CDM Registration number	CDM Registration/ Inclusion date	GS Registration number	GS Registration date
Improved Cooking Stoves for Nigeria Programme of Activities (PoA)	5067	10.11.2011	GS834	13.03.2012
CPA1	5067-0001	10.11.2011	GS1162	13.03.2012
CPA2	5067-0002	11.07. 2012	GS1352	04.07.2013
CPA3	5067-0003	11.07. 2012	GS1353	04.07.2013
CPA4	5067-0004	29.05.2013	GS2437	21.02.2014
CPA5	5067-0005	29.05.2013	GS2438	21.02.2014

The Monitoring of Sustainable Development Indicators was conducted in accordance with the GS CPA passport (CPA PP). According to requirements of the Gold Standard, the project activity must be assessed against a matrix of sustainable development indicators. Indicators that were not scored neutral must be monitored.

The SD Matrix as in the passport is as follows:

Indicator	Mitigation measure	Relevance to achieving MDG	Chosen parameter and explanation	Preliminary score
Gold Standard indicators of sustainable development	If relevant, copy mitigation measure from 'Do No Harm' assessment, and include mitigation measure used to neutralise a score of '-'	Check www.undp.org/mdg and www.mdgmonitor.org Describe how your indicator is related to local MDG goals	Defined by project developer	<u>Negative impact:</u> score '-' in case negative impact is not fully mitigated, score '0' in case impact is planned to be fully mitigated <u>No change in impact:</u> score '0'



				Positive impact: score '+'
Air quality		MDG 4: Reduce Child Mortality MDG 5: Improve Maternal Health MDG 6: Combat HIV/AIDS, Malaria and other Diseases	Parameter: Number of ICS disseminated/ in use. Explanation: ICS disseminated under the PoA will lead to a Reduction of Indoor Air Pollution.	+
Water quality and quantity		MDG 7: Environmental sustainability	Parameter: Preservation of the remaining woody vegetation in its function to inhibit a quick run-off of rainwater Note: Parameter will not be monitored because scoring is zero.	0
Soil condition		MDG 7: Environmental sustainability	Parameter: Reduction of soil erosion. Note: Parameter will not be monitored because scoring is zero.	0
Other pollutants		MDG 7: Environmental sustainability	Parameter: Level of noise during assembly (if applicable) Note: Parameter will not be monitored because scoring is zero.	0
Biodiversity		MDG 7: Environmental sustainability	Parameter: Number and type of trees saved. Note: Parameter will not be monitored because scoring is zero.	0
Quality of employment	Safe working environment: Working gloves to all assembly workers will be provided. First aid boxes are at hand in all workshops. In the cooking demonstrations users are instructed on the safe use of the SAVE80 or other ICS.	MDG 1: Poverty reduction	Parameter: Time needed for assembly of ICS (before training and after training). Explanation: This parameter was proposed by the stakeholders and found to be a suitable parameter by the PPs to measure changes after assemblers received training	+
Livelihood of the poor		MDG 1: Poverty reduction	Parameter: Change in number of chronic obstructive respiratory diseases (COPD) and pneumonia among ICS users	0



			Note: Parameter will not be monitored because scoring is zero.	
Access to affordable and clean energy services		MDG 1: Poverty reduction MDG 7: Environmental sustainability	Parameter: Change in traditional fuel consumption. Explanation: Affordable efficient and clean cooking stoves are made available which will save wood fuel. The amount of wood fuel saved can be quantified.	+
Human and institutional capacity		MDG 2: Universal education	Parameter: Number of cooking demonstrations carried out. Explanation: Demonstrations on the use of ICS have training character and raise awareness about environmental and health problems due to fuel wood use. Women are especially targeted by the cooking demonstrations	+
Quantitative employment and income generation		MDG 2: Universal education	Parameter: Number of jobs created. Explanation: PoA will provide job opportunities in various areas such as distribution, monitoring and after sales service.	+
Balance of payments and investment		MDG 1: Poverty reduction MDG 8: Global Partnership	Parameter: Amount of foreign direct Investment. Note: Parameter will not be monitored because scoring is zero.	0
Technology transfer and technological self-reliance		MDG 8: Global Partnership	Parameter: Types, Number and nature (imported, assembled locally, produced locally) of ICS disseminated / in use	+



ID 01: Air quality

Table as in the passport:

No		01
Indicator		Air quality
Mitigation measure		N/A
<i>Repeat for each parameter</i>		
Chosen parameter		Number of ICS in use/ disseminated
Current situation of parameter		No ICS implemented under the PoA. First implementation of stoves under the first CPA of the PoA will start in the second quarter of 2011.
Estimation of baseline situation of parameter		No usage of ICS and therefore no reduction of harming Indoor pollution
Future target for parameter		Up to 2016 dissemination of 130,000 cookers (PoA target)
Way of monitoring	How	Sales records (Database), Sample survey will include question on improvement of air quality.
	When	Sales recording and sample survey will be performed according to the frequency specified in the PoA-DD
	By who	Dedicated Monitoring team (see PoA-DD)

Air quality was hence monitored by

- 1.) Number of ICS in use, indicating the number of households benefiting from improved air quality. The allocation of the stove IDs to CPA1 was done in the document "Sampling Database PoA 5067_CPA 1, 2, 4 MP4", which was submitted to the DOE.
- 2.) Results from interviewing a sample group of households (during CDM sample survey), to take into account the perception of improvements in air quality by households

Ad 1.)

The number of SAVE80 systems in use and hence the number of households benefitting from improved air quality can be seen from the table below.

ICS delivered to households in this CPA	3,198
Systems operational (%)	90,83
Systems operational (number)	2902
Households benefitting from improved air quality	2902

Table 1: Number of ICS in use

Ad 2.)

During the sample survey, the following question was asked to SAVE80 users:

Did you perceive any change in air quality since cooking on the stove? All households who used the Save80 are of the opinion that the ICS (Save80) improves the air quality as can be seen from the table below.

Question	Yes	% of respondents	No	% of respondents	No Answer	Total
Did you perceive any change in air quality since cooking on the stove?	39	100%	0	0	0	39

Table 2: Perceived better air quality

Evidence (submitted to DOE):

- Sampling Database PoA 5067_CPA 1, 2, 4 MP4
- 1.1_PoA_Ex-Post_Nigeria_5067_MP4_Spreadsheet



ID 02: Quality of employment

Table as in the passport:

No		02
Indicator		Quality of employment
Mitigation measure		N/A
Repeat for each parameter		
Chosen parameter		Time needed for assembly of ICS (after training). Explanation: This parameter was proposed by the stakeholders during the Stakeholder Consultation Meeting and found to be a suitable parameter by the PPs to measure changes after assemblers received training. However, please note that the PoA may implement different stove types, and not all of them will require assembly, this parameter can only be assessed for the stove types that require assembly.
Current situation of parameter		No ICS implemented under the PoA. Training of assemblers under the PoA will start in the second quarter of 2011.
Estimation of baseline situation of parameter		For example for the Save80 ICS, assembly may take more than 1 hour in case no proper training has been received.
Future target for parameter		For example for the Save80 ICS, it can take less than 40 minutes to assemble one stove.
Way of monitoring	How	Recording time of 3 assemblies
	When	Once per monitoring period at selected distributors which implement ICS where assembly is required.
	By who	Dedicated monitoring team (see PoA-DD)

Quality of employment was monitored by recording the time of 3 assemblies. As can be seen from the table below the distributor recorded the time for the 3 assemblies separately. The table shows that the experienced assemblers need less time than anticipated in the PP.

Distributor		Name of Assembler	Time to assemble stove (minutes)
BIA	Stove 1	Adebayo Matilukuro	22
BIA	Stove 2	Adebayo Helen	25
BIA	Stove 3	Abisola Babatunde	30

Table 3: Time needed for Save80 assembly

Evidence (submitted to DOE):

- GS_ID02_Quality of Employment_BIA

Quality of employment mitigation measure:

Safety measures were taken from the beginning of the programme of activity.

The compliance with safety measures was monitored at the project partners' workshops. The pictures below were taken within the monitoring period on 08.11.2014. Safety measures were installed as shown e.g. by the pictures of first aid kits, which are available for the workers in the workshops (Picture 1-2) and by the installed safety instruction posters, which are located in prominent position in the workshops (3-5). The pictures of assemblage workers using gloves (Picture 6-8) show that workers have accessibility to gloves and also are willing to utilize them.



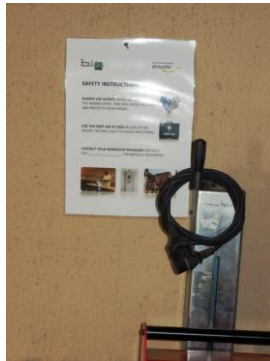
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Picture 1-2: First aid kits in the project partners' workshop



Picture 3-5: Safety instruction poster



Picture 6-7: Usage of gloves Picture for assemblage



Picture 8: Availability of gloves of different sizes in the workshop



ID 03: Access to affordable and clean energy services

Table as in the passport:

No		03
Indicator		Access to affordable and clean energy services
Mitigation measure		N/A
Repeat for each parameter		
Chosen parameter		Change in traditional fuel consumption, Explanation: Affordable efficient and clean cooking stoves are made available which will save wood fuel. The amount of wood fuel saved can be quantified.
Current situation of parameter		End users are using traditional fireplaces which are not efficient.
Estimation of baseline situation of parameter		See the PoA DD for the baseline fuelwood consumption.
Future target for parameter		Depending on the ICS disseminated, the fuel wood savings can go up to 80%.
Way of monitoring	How	Sales records (Database), Efficiency tests.
	When	Sales recording and efficiency tests will be performed according to the frequency specified in the PoA-DD
	By who	Dedicated monitoring team (see PoA-DD)
Chosen parameter		Discounted price for the improved cook stove for the end user as incentive mechanism for the discontinued use of baseline stoves.
Current situation of parameter		Improved stoves are either not available or sold at full price or distributed as part of ODA financed projects
Estimation of baseline situation of parameter		See above
Future target for parameter		Stoves are sold at a discounted price in order to encourage people to discontinue using the baseline stove
Way of monitoring	How	The end user price stated on the sales invoice is compared to the full costs for stove production, tax and duties, transportation and distribution costs.
	When	Annual or biennial but records continuously maintained until the end of the crediting period.
	By who	Dedicated monitoring team (see PoA-DD)

Two parameters are chosen to monitor the access to affordable and clean energy services

- 1.) Change in traditional fuel consumption. This parameter was calculated as the amount of biomass saved under the project activity per household. The results can be seen in the table below:

A) Baseline consumption (kg /yr) as per registered CPA-DD and number of eaters determined during monitoring (B_{old})	B) Savings (kg/ yr) = Change in traditional fuel consumption $B_{y,savings} = B_{old} \cdot (1 - \frac{\eta_{old}}{\eta_{new}})$	C) Current consumption (kg /yr) $C = A - B$
4.4648	3.2453	1.2195

Table 4: Change in traditional fuel consumption

- 2.) Discounted price for end user as incentive mechanism for the discontinued use of the baseline stove.

The end users received the Save80 system at a price which was lower than the full costs of the stove.

Evidence (submitted to DOE):

- 1.1_PoA_Ex-Post_Nigeria_5067_MP4_Spreadsheet
- GS_ID03_Sample sales receipts_CPA 1,2,4



ID 04: Human and institutional capacity

Table as in the passport:

No		04
Indicator		Human and institutional capacity
Mitigation measure		N/A
Repeat for each parameter		
Chosen parameter		Number of cooking demonstrations carried out. There will be a reporting form to be used by the distributors which will also record the number of female participants. Explanation: Demonstrations on the use of ICS have training character and raise awareness about environmental and health problems due to fuel wood use. Women are especially targeted by the cooking demonstrations
Current situation of parameter		No ICS implemented under the PoA. Cooking demonstrations under the PoA will start in the second quarter of 2011.
Estimation of baseline situation of parameter		No capacity building through demonstrations and thus no effect on environmental and health issues
Future target for parameter		Demonstrations depend on the implementation schedule. Future target is unknown.
Way of monitoring	How	Recording number of cooking demonstrations.
	When	Once per monitoring period.
	By who	Dedicated monitoring team (see PoA-DD)

The indicator “Human and institutional capacity” was monitored by the number of cooking demonstrations carried out by the distributors in the communities.

The following cooking demonstrations were carried out during the Monitoring Period:

Distributor	Date and Time	Total number of Participants	Number of female participants	Location	Target Group	Description of Event	Name and Signature of distributor Trainer(s)
DARE/atmosfair	3 rd November 2014 10.00am	25	10	National Center for Energy Efficiency and Conservation, Lagos- The Energy Commission of Nigeria	Staff of the EEC	Demonstration of Efficiency Fuel Wood Stove	Toyin Oshaniwa Bello Shola
DARE/atmosfair	28th November 2014 11:00am	130	70	Mustard Seed/ Redeemed Christian Church of God Mission, Ogun State	Missionaries	Sensitization of rural missionaries on the importance of clean and fuel efficient cooking (Save 80)	Toyin Oshaniwa Bukola Gbolade
DARE/atmosfair	7th December 2014 12:00pm	5	2	Ecobank Headquarter Lagos	Renewable Energy /Energy Efficiency Team	CSR- Funding of Save 80 stove for communities in Nigeria	Toyin Oshaniwa Bello Shola
DARE/atmosfair	13th May 2015 11:00am	5	3	LAPO Microfinance Bank	LAPO NGO team	Micro-Finance Funding of efficient cook stove (Save 80) for Women	Toyin Oshaniwa Baerbel Feyer Jennifer

Table 5: Cooking demonstrations



Evidence (submitted to DOE):

- GS_ID04_Reporting Form Human Capacity_PoA_Nigeria

ID 05: Quantitative employment and income generation

Table as in the passport:

No	05
Indicator	Quantitative employment and income generation
Mitigation measure	N/A
<i>Repeat for each parameter</i>	
Chosen parameter	Number of jobs created. Explanation: PoA will provide job opportunities in various areas such as distribution, monitoring and after sales. There will be a reporting form to be used by the distributors which will also record the employment status, e.g. permanent, part time, freelance, piece rate).
Current situation of parameter	No ICS implemented under the PoA, therefore number of jobs created cannot be quantified.
Estimation of baseline situation of parameter	No creation of new jobs associated with the PoA up to now.
Future target for parameter	Increase number of jobs will depend on implementation schedule, thus future target is unknown.
Way of monitoring	How Staff figures reported by the distributors Formula used to report employment figures for the specific CPA: Total number of jobs created in the PoA * share of stoves of the specific CPA.
	When Once per Monitoring Period
	By who Dedicated monitoring team (see PoA-DD)

Quantitative employment and income generation was monitored by the number of jobs created and whether the employment is permanent or part time, freelance etc. The following table gives an overview of the jobs created in Nigeria. A total staff of 10 are involved in this CPA, working for one of the two distributors.

Employment Status	Number
- Permanent/ full time + part time	8
- Freelancer	2
- piece rate	

Position	Number
- Management & Administration	6 (3 permanent, 2 Freelancer)
- Sales & Marketing	7 (6 permanent)
- Other (e.g. driver)	1 (1 permanent)

Table 6 & 7: Job creation

Therefore the total number of jobs created for this CPA are:

Number of jobs created in the PoA * share of stoves of the specific CPA

$$10 \cdot 3196 / (3196 \text{ (CPA1)} + 3184 \text{ (CPA2)} + 2235 \text{ (CPA3)} + 2527 \text{ (CPA4)}) = 2,86$$

Evidence (submitted to DOE):

- GS_ID05_Reporting Form Quantity of Employment and income generation



ID 06: Technology transfer and technological self-reliance

Table as in the passport:

No		06
Indicator		Technology transfer and technological self-reliance
Mitigation measure		N/A
Repeat for each parameter		
Chosen parameter		Types, Number and nature (imported, assembled locally, produced locally) of ICS disseminated / in use
Current situation of parameter		No ICS implemented under the PoA
Estimation of baseline situation of parameter		End users are using traditional fireplaces
Future target for parameter		ICS numbers will depend on implementation schedule, thus future target is unknown.
Way of monitoring	How	Sales Records (Database)
	When	Sales recording will be performed according to the frequency specified in the PoA-DD
	By who	Dedicated monitoring team (see PoA-DD)
Chosen parameter		Shift of production steps to Nigeria
Current situation of parameter		Only assembly is done in Nigeria
Estimation of baseline situation of parameter		No production takes place
Future target for parameter		Full production will be in Nigeria (long term target) Intermediate targets; 1. assembly and folding is done in Nigeria 2. cutting, folding and assembly is done in Nigeria Note: It is hoped that the stoves will one day be fully made in Nigeria but due to the lack of available and reasonably priced materials and high tech tools (in particular stainless steel, laser cutters, etc.) in Nigeria, this will most likely be in the long term.
Way of monitoring	How	Report about the status of shift of production steps
	When	Once per monitoring period
	By who	Dedicated monitoring team (see PoA-DD)

Regarding type, number and nature of stoves, it was as follows:

Type	SAVE80
Nature	Imported
Number	3,196

Evidence (submitted to DOE):

- Sampling Database PoA 5067_CPA 1, 2, 4 MP4

Technology transfer and technological self reliance was monitored by reporting about the shift of production steps to Nigeria: At the end of the monitoring period there was further progress in the shift of the production steps to Nigeria. Folding and assemblage of the Save80 stove is completely done in Nigeria by both project partners, using a manual folding machine. Also the numbering of the stoves is done in Nigeria. For this marking machines were provided by the CME to the distributors in Nigeria.

Additional remarks monitoring



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Additional remarks monitoring

Impact on wood sellers

Several descendants (young adolescents from wood sellers) were trained in the first years of the project to assemble the SAVE80 stoves in the Kano and Katsina states. Furthermore, trainings were also conducted for construction of plastic bottle houses and for solar energy. Also these adolescents from wood sellers participated in this training. The political conflict in the country stopped the implementation of new trainings in 2014.

Exchange of the CME with other organisations and institutes regarding the PoA and its CPAs during the monitoring period

The CME was in contact with several other entities regarding the PoA and its CPAs.

An additional cookstove type delivered by a different company was included into the PoA (CPA3). This new cookstove type was monitored the third time during this monitoring period. The CME was also in contact with several organisations who planned to include an own CPA into the registered PoA. However no contracts could be signed so far, based on the political situation.

Design changes

No design changes applied during the monitoring period.

Safety instructions

The CME provided safety instructions for distribution to workers or use as poster for workshop walls (evidence submitted to DOE) during the previous monitoring periods. No further safety instructions applied during this monitoring period, as the production and distribution has been stopped.