



VERIFICATION REPORT FOUNDATION MYCLIMATE - THE CLIMATE PROTECTION PARTNERSHIP

VERIFICATION OF THE ADES SOLAR AND EFFICIENT STOVES IN MADAGASCAR

REPORT No.BVC/KENYA-VR/20/2015

REVISION No. 01

BUREAU VERITAS CERTIFICATION

62/71 Boulevard du Château
92571 Neuilly Sur Seine Cdx - France



VERIFICATION REPORT

Date of first issue: 10/06/2015	Organizational unit: Bureau Veritas Certification Holding SAS
Client: Foundation myclimate - the Climate Protection Partnership	Client ref.: Mr. Tobias Hoeck
Summary: Bureau Veritas Certification has conducted the 6th periodic verification of ADES Solar and efficient stoves in Madagascar, Gold Standard Registration Reference Number GS 464, owned by ADES – Association pour le Développement de l'Energie Solaire, which is located in Madagascar, and applying the Gold Standard Methodology for Improved Cook-stoves and Kitchen Regimes V.01, on the basis of: a) UNFCCC criteria for the CDM, as well as criteria given to provide for consistent project operations, monitoring and reporting, b) requirements for Voluntary Offset Projects under the Gold Standard, including the applied Gold Standard methodology. UNFCCC criteria refer to Article 12 of the Kyoto Protocol, the CDM rules and modalities and the subsequent decisions by the CDM Executive Board, as well as the host country criteria. The Gold Standard requirements are stipulated in the GS Requirements (version 2.2) and the Gold Standard Toolkit (version 2.2) The verification scope is defined as an independent and objective review and ex-post determination of the monitored GHG emission reductions, and consisted of the following three phases: i) desk review of the project design, the baseline and monitoring plan; ii) follow-up interviews with project stakeholders; iii) resolution of outstanding issues and the issuance of the final verification report and opinion. The overall verification, from Contract Review to Verification Report & Opinion, was conducted using Bureau Veritas Certification internal procedures. In summary, Bureau Veritas Certification confirms that the project is implemented as planned and described in the approved revised project design documents. Distributed equipment (solar and efficient cook-stoves) being essential for generating emission reduction run reliably. The monitoring system is in place and the project is generating GHG emission reductions. The GHG emission reductions are calculated without material misstatements, and the emission reductions verified totalize 181,996 tons of CO₂e for the monitoring period. Our opinion relates to the projects' GHG emissions and resulting GHG emission reductions reported and related to the valid and registered project baseline, approved revised monitoring plan and its associated documents. Reporting period: 01/01/2014 - 31/12/2014 Baseline emissions: Integrated in the ER calculation formula t CO₂ equivalents. Project emissions: Integrated in the ER calculation formula t CO₂ equivalents. Leakage emissions: Integrated in the ER calculation formula t CO₂ equivalents. Emission Reductions: 181,996 t CO₂ equivalents.	

Report No.: BVC-Kenya/VR20/2015	Subject Group: GS
Project title: ADES Solar and efficient stoves in Madagascar	
Work carried out by: Mr. Samuel Mayieko - Team Leader	
Internal Technical Review carried out by: Mr. Andrew Kinyanjui Mr. James Mwaniki – (Support specialist)	
Date of this revision: 18/06/2015	Rev. No.: 01
Number of pages: 69	

Indexing terms

Work approved by:

Mr. Sanjay Patankar
☒ No distribution without permission from the Client or responsible organizational unit

☐ Limited distribution

☐ Unrestricted distribution



Abbreviations

CAR	Corrective Action Request
CDM	Clean Development Mechanism
CER	Certified Emission Reductions
CL	Clarification Request
CO ₂	Carbon Dioxide
CO ₂ e	Carbon Dioxide Equivalent
DOE	Designated Operational Entity
DRR	Daily Reading Record
ETN	Electricity Transaction Note
FAR	Forward Action Request
GHG	Green House Gas(es)
MoV	Means of Verification
MP	Monitoring Plan
MR	Monitoring Report
MRR	Monthly Reading Record
PDD	Project Design Document
PLF	Plant Load Factor
PP	Project Participant
PPA	Power Purchase Agreement
UNFCCC	United Nations Framework Convention on Climate Change
VVS	Validation and Verification Standard



Table of Contents	Page
1. INTRODUCTION	5
1.1. Objective	5
1.2. Scope	5
1.3. GHG Project Description	6
1.4. Verification Team	7
2. METHODOLOGY	7
2.1. Review of Documents	8
2.2. Follow-up Interviews	8
2.3. Resolution of Clarification, Corrective and Forward Action Requests	9
2.4. Internal Technical Review	9
3. VERIFICATION CONCLUSIONS.....	10
3.1. Remaining issues from validation or previous verification (213)	10
3.2. Compliance of the project implementation with the registered project design document (228)	11
3.3. Compliance of the monitoring plan with the monitoring methodology including applicable tool(s) (232)	12
3.4. Compliance of monitoring activities with the monitoring plan (235-236)	12
3.5. Compliance with the calibration frequency requirements for measuring instruments (243)	18
3.6. Assessment of data and calculation of emission reductions (246)	18
4. VERIFICATION OPINION.....	23
5. REFERENCES	24
6. CURRICULA VITAE OF THE DOE'S VERIFICATION TEAM MEMBERS	26

APPENDIX A: CDM PROJECT VERIFICATION PROTOCOL **ERROR! BOOKMARK NOT DEFINED.**



1. INTRODUCTION

Foundation myclimate - the Climate Protection Partnership has commissioned Bureau Veritas Certification to verify the Gold Standard registered VER project ADES Solar and efficient stoves in Madagascar (hereafter called **"the Project"**) in Madagascar.

This report summarizes the findings of the verification of the Project, performed on the basis of UNFCCC criteria, as well as criteria given to provide for consistent project operations, monitoring and reporting, as well as requirements for Voluntary Offset Projects under the Gold Standard.

1.1. Objective

The objective of verification under UNFCCC CDM is to conduct a thorough, independent assessment of the registered project activities.

In carrying out its verification work, the DOE shall ensure that the project activity complies with the requirements of paragraph 62 of the CDM modalities and procedures. In particular, this assessment shall:

- (a) Ensure that the project activity has been implemented and operated as per the registered PDD or any approved revised PDD, and that all physical features (technology, project equipment, and monitoring and metering equipment) of the project are in place;
- (b) Ensure that the monitoring report and other supporting documents provided are complete in accordance with latest applicable version of the completeness checklist for requests for issuance of CERs, verifiable, and in accordance with applicable CDM requirements;
- (c) Ensure that actual monitoring systems and procedures comply with the monitoring systems and procedures described in the monitoring plan or any revised approved monitoring plan, and the approved methodology including applicable tool(s);
- (d) Evaluate the data recorded and stored as per the monitoring methodology including applicable tool(s).

Additionally the DOE shall ensure that the project activity also complies with requirements unique to Gold Standard in particular:

- (e) The GS Monitoring plan and the additional requirements stated by the Gold Standard, including the monitoring of sustainable development indicators

1.2. Scope

The verification scope is defined as an independent and objective review and ex-post determination of the monitored GHG emission reductions. The verification is based on the validated and registered project design document, the monitoring report, emission reduction calculation spreadsheet, and supporting documents. The information in these documents is reviewed against Kyoto Protocol requirements, UNFCCC rules and associated interpretations; and additional requirements stated by the Gold Standard.



The verification is not meant to provide any consulting service towards the PPs. However, stated requests for clarifications and/or corrective actions may provide input for improvement of the project monitoring towards reductions in the GHG emissions.

1.3. GHG Project Description

The Project consists of production and distribution of solar cook-stoves and efficient biomass (wood and charcoal) cook-stoves in the country of Madagascar. The project replaces traditional inefficient wood and charcoal stoves. The project achieves emissions reduction through the amount of non-renewable biomass saved. Currently the project produces 9 types of stoves namely: Solar box stove, E-solar box stove*, Solar parabolic stove, Efficient wood stove OLI-b, Efficient wood stove OLI-45b, Efficient wood stove OLI-60b, Efficient charcoal stove OLI-c, Efficient charcoal stove OLI-45c and Efficient charcoal stove OLI-60c. However, out of the 9 types of stoves, only 6 types (Solar box stove, Solar parabolic stove, Efficient wood stove OLI-b, Efficient wood stove OLI-45b, Efficient charcoal stove OLI-c and Efficient charcoal stove OLI-45c) are counted for emission reductions. Since the start of the project, usage of the stoves has evolved into four main clusters namely: wood cluster, charcoal cluster, Solar+Oli-b and Solar+Oli-c. According to the approved revised PDD (Ref/1/), it is estimated that by 2014, the project will have some 39,251 stoves in operation resulting in an estimated 93,945 tons of CO₂e emissions reductions. The annual average estimated emission reductions over the crediting period are 44,662 tCO₂e. The project contributes to sustainable development by: Providing employment, training and awareness raising and reducing time and money spent on fuel. The project is developed and managed by ADES (Association pour le Développement de l'Energie Solaire), a Swiss NGO.

Project title:	ADES Solar and efficient stoves in Madagascar
GS ref number:	GS 464
Registration Date:	23/12/2009
Crediting Period:	01/01/2008 to 31/12/2014 (renewable)
Monitoring Period:	01/01/2014 - 31/12/2014
Project Participants:	ADES – Association pour le Développement de l'Energie Solaire (Madagascar) Foundation myclimate - the Climate Protection Partnership (Switzerland)
Methodologies used	Methodology for Improved Cook-stoves and Kitchen Regimes V.01
Location of the Project:	Madagascar
Geo coordinates:	The entire geographical boundary of Madagascar Town/cities, where existing production and distribution centers are located: - Toliara (Tuléar): 23°21'S, 43°40'E - Ejeda: 24°21'S, 44°31'E - Morondava: 20°17'5"S, 44°19'3"E - Morombe: 21°44'56"S, 43°21'47"E - Majunga: 15°42'55.09"S, 46°19'8.42"E - Fianarantsoa: 21°27'12.07"S, 47°05'08.42"E

*The Project developer has temporarily discontinued the production and distribution of E solar boxes



- Antananarivo: 18°55'18.01"S, 47°31'05.58"E

Registry view page: https://mer.markit.com/br-reg/public/project.jsp?project_id=103000000002452

The project has since registration reported emission reduction for the following monitoring periods:

- a) First monitoring period (included retroactive emission reductions) 04/01/2008 – 22/12/2009
- b) Second monitoring period: 23/12/2009 to 31/12/2010
- c) Third monitoring period: 01/01/2011 to 31/12/2011
- d) Fourth monitoring period: 01/01/2012 to 31/12/2012
- e) Fifth monitoring period: 01/01/2013 to 31/12/2013

[Post Registration Changes]

No post registration changes have been requested.

1.4. Verification Team

The assessment team and internal technical reviewer team consist of the following personnel:

FUNCTION	NAME	TA 3.1	TASK PERFORMED*
Team Leader	Mr. Samuel Mayieko	☒	☒ DR ☒ SV ☒ RI ☐ TR
Technical Specialist	N.A.	☐	☒ DR ☒ SV ☐ RI ☐ TR
Internal Technical Reviewer (ITR)	Mr. Andrew Kinyanjui	☐	☐ DR ☐ SV ☐ RI ☒ TR
Specialist supporting ITR	Mr. James Mwaniki	☒	☐ DR ☐ SV ☐ RI ☒ TR

*DR = Document Review; SV = Site Visit; RI = Report issuance; TR = Internal Technical Review

2. METHODOLOGY

The overall verification, from Contract Review to Verification Report & Opinion, was conducted using Bureau Veritas Certification internal procedures.

In order to ensure transparency, a verification protocol was customized for the project, according to the version 07.0 of the Clean Development Mechanism Validation and Verification Standard (Ref/6/). The protocol shows, in a transparent manner, criteria (requirements), means of verification and the results from verifying the identified criteria. The verification protocol serves the following purposes:

- It organizes, details and clarifies the requirements a CDM project is expected to meet;
- It ensures a transparent verification process where the verifier will document how a particular requirement has been verified and the result of the verification.

The completed verification protocol is enclosed in Appendix A to this report.



2.1. Review of Documents

The assessment of the project documentation provided by the project participant is based upon both quantitative and qualitative information on emission reductions. Quantitative information comprises the reported numbers in the monitoring report (MR) version 02 dated 12/05/2015 (Ref/3/) and emission reduction calculation spreadsheet version 02 dated 12 May 2015 (Ref/4/). Qualitative information comprises information on internal management controls, calculation procedures, procedures for transfer of data, frequency of emissions reports, and review and internal audit of calculations.

The DOE understands that the monitoring report version 01 submitted by the project participant has been made available in the Gold Standard registry. In addition to the monitoring documentation provided by the project participants, the DOE reviews:

- (a) The approved revised PDD and the monitoring plan /1/,
- (b) Previous verification reports /7/;
- (c) The applied monitoring methodology /5/;
- (d) FARs raised by GS in the previous issuance /8/;
- (e) Other information and references relevant to the project activity's resulting in emission reductions such as:
 - i. Project database /9/,
 - ii. Customer Database /10/,
 - iii. Financial audit report /11/.
 - iv. Kitchen test reports /12/,/13/
 - v. Calibration records /17/
 - vi. Usage survey report /14/
 - vii. Leakage survey report /15/
 - viii. Kitchen survey report /16/

2.2. Follow-up Interviews

On 27/04/2015 to 01/05/2015, Bureau Veritas Certification performed a site visit and interviews with project stakeholders to confirm selected information and to resolve issues identified in the document review. Representatives of ADES – Association pour le Développement de l'Energie Solaire and a sample of cook-stove users were interviewed (see References). The main topics of the interviews are summarized in Table 1.

Table 1 Interview topics

Interviewed organization	Interview topics
ADES – Association pour le Développement de l'Energie Solaire (the Project Owner)	➤ Project Design and implementation ➤ Technical equipment, calibration and operation ➤ Monitoring Plan and management procedures ➤ Monitoring data ➤ Survey methods and data ➤ Data transfer ➤ Data uncertainty and residual risks (QA/QC)



	➤ GHG Calculation ➤ Environmental Impacts ➤ Compliance with National Laws and Regulations ➤ Sustainable development indicators
End users	➤ Participation in monitoring (Surveys and Kitchen Tests) ➤ Stove quality and usage ➤ Benefits from stove usage
Schools	➤ Participation in ADES sensitization and training activities

2.3. Resolution of Clarification, Corrective and Forward Action Requests

The objective of this phase of the verification is to resolve issues related to the monitoring, implementation and operations of the registered project activity that could impair the capacity of the registered project activity to achieve emission reductions or influence the monitoring and reporting of emission reductions prior to Bureau Veritas Certification's positive conclusion on the GHG emission reduction calculation.

Findings established during the verification can either be seen as a non-fulfillment of criteria ensuring the proper implementation of a project or where a risk to deliver high quality emission reductions is identified.

A Corrective Action Request (CAR) is raised, if one of the following situations occurs:

- (a) Non-compliance with the monitoring plan or methodology are found in monitoring and reporting and has not been sufficiently documented by the project participants, or if the evidence provided to prove conformity is insufficient;
- (b) Modifications to the implementation, operation and monitoring of the registered project activity has not been sufficiently documented by the project participants;
- (c) Mistakes have been made in applying assumptions, data or calculations of emission reductions that will impact the quantity of emission reductions;
- (d) Issues identified in a FAR during validation to be verified during verification or previous verification(s) have not been resolved by the project participants.

A Clarification Request (CL) is raised, if information is insufficient or not clear enough to determine whether the applicable CDM requirements have been met.

A Forward Action Request (FAR) is raised, for actions if the monitoring and reporting require attention and/or adjustment for the next verification period.

To guarantee the transparency of the verification process, the concerns raised are documented in more detail in the verification protocol in Appendix A.

2.4. Internal Technical Review

The verification report underwent an Internal Technical Review (ITR) before requesting issuance of CERs for the project activity.

VERIFICATION REPORT

The ITR is an independent process performed to examine thoroughly that the process of verification has been carried out in conformance with the requirements of the verification scheme as well as internal Bureau Veritas Certification procedures.

The Team Leader provides a copy of the verification report to the reviewer, including any necessary verification documentation. The reviewer reviews the submitted documentation for conformance with the verification scheme. This will be a comprehensive review of all documentation generated during the verification process.

When performing an Internal Technical Review, the reviewer ensures that:

- The verification activity has been performed by the team by exercising utmost diligence and complete adherence to the CDM rules and requirements.
- The review encompasses all aspects related to the project which includes project design, baseline, additionality, monitoring plans and emission reduction calculations, internal quality assurance systems of the project participant as well as the project activity, review of the stakeholder comments and responses, closure of CARs, CLs and FARs during the verification exercise, review of sample documents.

The reviewer may raise Clarification Requests to the verification team and discusses these matters with Team Leader.

After the agreement of the responses on the Clarification Requests from the verification team as well as the PP(s), the finalized verification report is accepted for further processing such as uploading via the UNFCCC interface or submission to the PP.

3. VERIFICATION CONCLUSIONS

In the following sections, the conclusions of the verification are stated.

The findings from the desk review of the original monitoring documents and the findings from interviews during the follow up visit are described in the Verification Protocol in Appendix A.

The Clarification, Corrective and Forward Action Requests are stated, where applicable, in the following sections and are further documented in the Verification Protocol in Appendix A. The verification of the Project resulted in 2 CAR(s), 3 CL(s) and 0 FAR(s).

The CARs, CLs and FARs were closed based on adequate responses from the Project Participant(s) which meet the applicable requirements. They have been reassessed before their formal acceptance and closure.

The number between brackets at the end of each section corresponds to the VVS paragraph.

3.1. Remaining issues from validation or previous verification (258)

Two FAR(s) were raised during the previous verification of this project activity. In FAR #1, the PP was requested to submit the English translation of surveys assessment sheet (xls) and Kitchen Survey Questionnaire for next verification. This has been addressed by the PP. The PP has provided English translations of the Kitchen survey questionnaire in section 5 of the Kitchen



survey report (ref/16/) and the corresponding excel sheets. The report and analysis sheets have been reviewed by the DOE and considered acceptable.

FAR #2 requires the DOE to include a summary of the discussions with the end users in the verification report. The DOE is also requested to include a question about the quality of cook-stove and also provide a summary of his/her field observation of cook-stove condition. To address this FAR, the DOE has prepared a site visit report and attached it as annex 1 of this verification report (refer to annex 1 page 66).

The verification team confirms that the project participants have addressed the FARs identified during previous verification.

3.2. Compliance of the project implementation with the registered project design document (273)

Bureau Veritas Certification has performed a site visit and found that the Project is in continues operation. The project continues to produce and distribute solar and efficient biomass (wood and charcoal) stoves. Eight types are being produced and distributed (production and distribution of the E Solar box has been halted temporality).

No changes to the project design have been identified during this verification. The implementation and operation of the project activity have been conducted in accordance with the description contained in the approved revised PDD.

Information (data and variables) provided in the monitoring report that is different from that stated in the approved revised PDD, and has caused an increase in estimates of the emission reductions in the current monitoring period and also likely to increase the estimates of emission reductions in the future monitoring periods is further reported in section 3.6 of this report.

[Management and Operation]

The PP has operated the Project as per the approved revised PDD and monitoring manual (ref/1/). There are no changes to the monitoring organization set up and verified in the previous verification cycle. All monitoring staffs are trained and qualified for their respective roles in the operation and monitoring of the project. For confirmation, the DOE reviewed a sample of employment records (ref/18//19/) and interviewed a sample of ADES employees (refer to the list of people interviewed) during onsite assessment.

Corresponding to the paragraph 273 of VVS version 07.0, Bureau Veritas Certification can confirm that:

- The implementation of the Project is consistent with the approved revised PDD.
- The Project is operated as per the approved revised PDD by the PP.
- Information (data and variables) provided in the monitoring report that is different from that stated in the approved revised PDD, and has caused an increase in estimates of the emission reductions in the current monitoring period and also likely to increase the estimates of emission reductions in the future monitoring periods is reported.



3.3. Compliance of the monitoring plan with the monitoring methodology including applicable tool(s) (277)

The Gold Standard Methodology for Improved Cook-stoves and Kitchen Regimes V.01 require that the PP to continuously maintain a Total Sales Record, a Detailed Customer Database, and Project Database and carry out monitoring kitchen surveys. The PP has fulfilled this requirement. The PP has maintained a Total Sales Record in a database called ADES Salesforce database which was reviewed during onsite assessment and previous verification. The PP has also maintained a Detailed Customer Database and Project Database which have been reviewed by the DOE. Further, in this monitoring period the PP has carried out kitchen surveys as required; a report and data has been provided and reviewed by the DOE.

The methodology also requires the PP to periodically carry out the following activities:

- Re-assessed the NRB fraction.
- Measurements for potential leakage effects
- Undertake a Usage survey for stoves sold in the first year to assess the drop-of rate
- Undertake an Aging-Stove KT for stoves sold in the first year,
- Undertake a New-Stove-KT: in case a new stove is introduced.
- Social and economic impact assessment

For this monitoring period, the PP has carried out the above activities as required. They have been assessed by the DOE and are reported in detail in section 3.4 of this report.

The verification team has verified the monitoring plan, including the data and parameters required to be monitored, measurement procedures, monitoring frequency and QC/QA procedures as described in the approved revised PDD.

Corresponding to the paragraph 277 of VVS version 07.0, Bureau Veritas Certification can confirm that the monitoring plan is in accordance with the approved methodology applied by the Project.

3.4. Compliance of monitoring activities with the monitoring plan (280-281)

Monitoring has been carried out in accordance with the monitoring plan version 03 contained as an annex to the approved revised PDD.

[Parameters and information flow]

The parameters required by the monitoring plan and how Bureau Veritas Certification has verified the information flow (from data generation, aggregation, to recording, calculation and reporting) for these parameters including the values in the monitoring report are described below:

Parameters monitored:

Parameter monitored and reported	Verification and conclusion
a) Total Sales Record - Number of stoves sold per cluster – The PP is	The PP maintains a total sales database (ADES Salesforce). The database is programmed to automatically generate



required to maintain a Total sales record. The Total Sales Record can be filtered to retrieve list for each cluster containing all stove users from the Total Sales Record belonging to this cluster and the list of all stove users not being part of any cluster	reports on all stove sales and those accounted for emissions reduction. The operation of the database was reviewed in the 5th verification cycle and was found to generate credible results. In 2014, an additional 22285 stoves are being counted for emission reductions. These are distributed in the clusters as follows: Charcoal = 18230, Solar + OLI-b = 338, Solar + OLI-c = 266 and Wood = 3451 To verify the number of stoves being counted for emissions reduction, the DOE compared the numbers reported in the monitoring report version 1 with the numbers reported in the previous issuance, as well as the numbers generated on site by ADES Salesforce system. The DOE further compared the number of stoves being reported with the ADES Financial Audit report (ref) done by Haja RAZAFIMHAZO email: hrzafim@yahoo.com, Tel: 033 49 400 50. From the review, some discrepancies were observed and two clarification requests were raised (refer to CL: 1 and CL: 2). The PP has addressed the CLs which have been reviewed and the responses accepted by the DOE. In this monitoring period, the PP is counting emissions reduction for the clusters as follows: <table><tr><th>Year</th><th>Charcoal</th><th>Solar + OLI-b</th><th>Solar + OLI-c</th><th>Wood</th><th>Total</th></tr><tr><td>2008</td><td>630</td><td>2</td><td>4</td><td>802</td><td>1438</td></tr><tr><td>2009</td><td>425</td><td>1</td><td>1</td><td>203</td><td>630</td></tr><tr><td>2010</td><td>1182</td><td>253</td><td>75</td><td>646</td><td>2156</td></tr><tr><td>2011</td><td>3859</td><td>162</td><td>1241</td><td>1241</td><td>6503</td></tr><tr><td>2012</td><td>7439</td><td>249</td><td>1231</td><td>1360</td><td>10279</td></tr><tr><td>2013</td><td>12436</td><td>195</td><td>846</td><td>1889</td><td>15366</td></tr><tr><td>2014</td><td>18230</td><td>338</td><td>266</td><td>3451</td><td>22285</td></tr><tr><td>Total</td><td>44201</td><td>1200</td><td>3664</td><td>9592</td><td>58657</td></tr></table> From the above review, the verification team conclude that the PP has monitored and reported this parameter as required.	Year	Charcoal	Solar + OLI-b	Solar + OLI-c	Wood	Total	2008	630	2	4	802	1438	2009	425	1	1	203	630	2010	1182	253	75	646	2156	2011	3859	162	1241	1241	6503	2012	7439	249	1231	1360	10279	2013	12436	195	846	1889	15366	2014	18230	338	266	3451	22285	Total	44201	1200	3664	9592	58657
Year	Charcoal	Solar + OLI-b	Solar + OLI-c	Wood	Total																																																		
2008	630	2	4	802	1438																																																		
2009	425	1	1	203	630																																																		
2010	1182	253	75	646	2156																																																		
2011	3859	162	1241	1241	6503																																																		
2012	7439	249	1231	1360	10279																																																		
2013	12436	195	846	1889	15366																																																		
2014	18230	338	266	3451	22285																																																		
Total	44201	1200	3664	9592	58657																																																		
b) Xnrb,pj,y - Non-renewability of woody biomass fuel in the project in year y– This parameter is fixed by baseline study for a given crediting period, updated if necessary as specified in section III.1 of the methodology.	The PP has chosen to have the parameter fixed for this crediting period and uses a default value (72%) provided by the UNFCCC CDM. This value was accepted in the previous monitoring periods. No further assessment was required																																																						
c) Bpj,i,y - Mass of woody biomass combusted in the project in year y – The PP is required to assess the parameter every two years through Kitchen tests.	The PP has monitored and reported this parameter through Aging-Kitchen test. Refer to f) below for the DOE assessment of Aging-Kitchen test. There was no variation in the values reported in this monitoring period from the values reported in the 5th verification cycle. The values reported are: Wood cluster: 2.499 t wood/stove year																																																						



	Charcoal cluster: 0.929 t charcoal /stove year																														
d) AF_{pj,i,y} - The mass of alternative fuel i combusted in the project in year y – The PP is required to assess the parameter every two years through Kitchen survey	The PP has conducted a Kitchen survey and provided a survey report (ref/16/) with the corresponding data. The report has been reviewed by the DOE as well as the statistical analysis done on the data. During on site assessment, the DOE further held interviews with the PP regarding the sampling and household visits, reviewed a sample of filled questionnaires and assessed the accuracy of data entered in the excel sheets. From the above review, the DOE concludes that the PP has monitored and reported this parameter as required by the approved monitoring plan and the results are acceptable. No combustion of alternative fuel was identified in this monitoring period.																														
e) Usage_{z,y} - Percentage of stoves of age z remaining in use in year y – The PP is required to assess the parameter every two years through Usage survey	As required, in this monitoring period the PP has carried out the third usage survey for solar stoves and the second usage survey for Oli-b. The results for Oli-b have been applied for Oli-45b, a similar but slightly larger stove. From the usage surveys the PP has determined the following drop-off rates: - 34.6% drop-off rate for Solar stoves of average age 5.8 years, translating to a usage rate of 65.4% - 63% drop-off rate for Oli-b stoves of average age 3.7 years, translating to usage rate of 37% From the results above the PP has applied a linear extrapolation to obtain the adjustment factors used in ER calculation as in the summary tables below: a) Extrapolation of drop-off rate and adjustment factor for solar stoves (introduced in 2008) <table><tr><th>Year in operation</th><th>Drop-off rate</th><th>Adjustment factor</th></tr><tr><td>1</td><td>0%</td><td>1</td></tr><tr><td>2</td><td>6.0%</td><td>0.94</td></tr><tr><td>3</td><td>12.0%</td><td>0.88</td></tr><tr><td>4</td><td>18.0%</td><td>0.82</td></tr><tr><td>5</td><td>24.0%</td><td>0.76</td></tr><tr><td>6</td><td>30.0%</td><td>0.70</td></tr><tr><td>7</td><td>36.0%</td><td>0.64</td></tr></table> b) Extrapolation of drop-off rate and adjustment factor for wood stoves – Oli-b introduced in 2010 and Oli-45b introduced in 2012 <table><tr><th>Year in operation</th><th>Drop-off rate</th><th>Adjustment factor</th></tr><tr><td>1</td><td>0%</td><td>1</td></tr></table>	Year in operation	Drop-off rate	Adjustment factor	1	0%	1	2	6.0%	0.94	3	12.0%	0.88	4	18.0%	0.82	5	24.0%	0.76	6	30.0%	0.70	7	36.0%	0.64	Year in operation	Drop-off rate	Adjustment factor	1	0%	1
Year in operation	Drop-off rate	Adjustment factor																													
1	0%	1																													
2	6.0%	0.94																													
3	12.0%	0.88																													
4	18.0%	0.82																													
5	24.0%	0.76																													
6	30.0%	0.70																													
7	36.0%	0.64																													
Year in operation	Drop-off rate	Adjustment factor																													
1	0%	1																													



2	16.9%	0.831
3	33.9%	0.661
4	50.8%	0.492
5	67.8%	0.322
6	84.7%	0.153

To verify the results, the DOE has reviewed the usage report (ref/14/) and the corresponding data provided by the PP. The DOE has reviewed the data analysis carried out by the PP, as well as the linear extrapolation and considers the results acceptable. The DOE also carried out a site visit and held telephone interview with a sample of users to confirm their participation in the usage survey carried out by the PP. During the on site assessment, the DOE also reviewed a sample of filled questionnaires and assessed the accuracy of data entered in the excel sheets.

The PP was not required to carry out usage survey for the Oli-c and Oli-45c since this was carried out in 2013 and the result verified in the 5th Issuance cycle. The DOE has compared the values applied in this monitoring period with the values applied in the previous monitoring period and confirms they are correct.

The DOE concludes that the PP has monitored and reported this parameter as required.

f) Agez - Adjustment to values of B_{pj,y} and A_{Fpj,i,y} for stoves of age x – The PP is required to assess the parameter every two years through Kitchen tests.

In this monitoring period the PP was required to carry out Aging-Kitchen test for the Solar+Wood cluster, Solar+Charcoal Cluster, Oli-b and Oli-45b. The DOE confirms that the PP has carried out the Aging-Kitchen tests as required. The Aging-Kitchen test results for Oli-b have been applied for Oli-45b and no separate kitchen test was required. The PP has provided the reports (ref/12/, /13/) and corresponding data for review. The reports and data have been reviewed, and additionally a site visit was carried out to confirm the information in the reports. During on site assessment, the DOE visited and held interviews with a sample of households that participated in the Oli-b Aging-Kitchen test. In addition, the DOE reviewed a sample of filled in questionnaires for the Aging-Kitchen tests and assessed the accuracy of data entered in the excel sheets. From the assessment, the DOE considers the PP's conclusions acceptable. The PP has applied the adjustment factors as follows:

- Solar+Wood cluster – no aging adjustment factor was



	necessary (results for 2014 Aging KT) - Solar+Charcoal Cluster - the flowing values are applied being a linear extrapolation of the results obtained in the 2014 Aging KT: <table border="1"> <thead> <tr> <th>stove age</th><th>Stove performance</th></tr> </thead> <tbody> <tr> <td>0-1</td><td>98.7%</td></tr> <tr> <td>1-2</td><td>96.1%</td></tr> <tr> <td>2-3</td><td>93.5%</td></tr> <tr> <td>3-4</td><td>90.9%</td></tr> <tr> <td>4-5</td><td>88.3%</td></tr> <tr> <td>5-6</td><td>85.7%</td></tr> <tr> <td>6-7</td><td>83.1%</td></tr> </tbody> </table> - Oli-b and Oli-45b – no aging adjustment factor (results for 2014 Aging KT) - Oli-c and Oli-45c – no aging adjustment factor (result from 2013 Aging KT) From the above assessment, the DOE concludes that the PP has monitored and reported this parameter.	stove age	Stove performance	0-1	98.7%	1-2	96.1%	2-3	93.5%	3-4	90.9%	4-5	88.3%	5-6	85.7%	6-7	83.1%
stove age	Stove performance																
0-1	98.7%																
1-2	96.1%																
2-3	93.5%																
3-4	90.9%																
4-5	88.3%																
5-6	85.7%																
6-7	83.1%																
g) New Stove B_{pj,i,y} and AF_{pj,i,y} - Adjustment to values of B_{pj,,y} and AF_{pj,i,y} for new stove models – The PP is required to assess the parameter whenever any new model is introduced and every two years thereafter, through kitchen tests.	In this monitoring period, no new stoves models were introduced. Monitoring of this parameter was not required.																
h) Similar new project activity in the project area – The PP is required to monitor and report any similar new project activity in the project area in order to avoid double counting.	The DOE confirms that the PP is continuously monitoring activities by other organisations with the aim of avoiding any double counting. In this monitoring period, the PP identified a registered CDM project activity in the boundary, besides monitoring activities by WWF, Blue Ventures, GIZ and JICA. None of the activities will result in double counting for this project activity. The DOE concludes that the PP has monitored and reported this parameter as required.																
i) Leakage (wood cluster) – The PP is required to assess the parameter every two years through survey	The PP has provided a leakage survey report (ref/15/) and data for review. The report has been reviewed by the DOE as well as the analysis on the data. The DOE considers the conclusion acceptable. No leakage has been identified.																
j) Leakage (charcoal cluster) – The PP is required to assess the parameter	Refer to (i) above.																



every two years through survey	
k) Incentive scheme to surrender charcoal baseline stove – An Annual assessment of number of efficient charcoal stoves (Oli-C) sold at a discount of 20% granted to households that hand in the baseline charcoal stove.	The DOE confirms, through the Financial Audit report (ref/11/) that the PP has continued with incentive mechanism. The DOE concludes the PP has monitored and reported the parameter as required.
l) Fvar - Adjustment factor for seasonal and weekly variation of biomass fuel consumption	The DOE confirms that the PP has monitored, this parameter as required through a kitchen survey (refer to (d) about on the DOE's assessment of the Kitchen Survey). The following values have been applied in ER calculation. 1. Wood cluster: 99.9% 2. Charcoal cluster: 100% 3. Solar+oli-b: cluster: 100% 4. Solar+oli-c cluster: 100%

Parameters determined ex-ante:

The following parameters were determined ex ante and are reported in the monitoring report. They have been crosschecked with values provided in the approved revised PDD and IPCC default values.

- EFbl.bio,co2 - CO2 emission factor arising from use of wood-fuel in baseline scenario (1.7472 tCO2/t wood and 3.3040 tCO2/t charcoal)
- EFpj.bio,co2 - CO2 emission factor arising from use of wood-fuel in project scenario (1.7472 tCO2/t wood and 3.3040 tCO2/t charcoal)
- EFaf,co2 - CO2 emission factor arising from use of alternative fuel (0.8136 tCO2/t LPG)
- EFbl.bio,non-co2 - Non-CO2 emission factor arising from use of wood-fuel in baseline scenario (0.1356 tCO2e/t wood and 0.1563 tCO2e/t charcoal). The PP has applied the GWP for CH4 & N2O, valid from 01/01/2013 (ref EB69 annex 3).
- EFpj.bio,non-co2 - Non-CO2 emission factor arising from use of wood-fuel in baseline scenario (0.1356 tCO2e/t wood and 0.1563 tCO2e/t charcoal). The PP has applied the GWP for CH4 & N2O, valid from 01/01/2013 (ref EB69 annex 3).



- EF_{faf}, non-co₂ - Non-CO₂ emission factor arising from use of alternative fuel (0.0064 tCO₂e/t LPG)
- EF_{bio,prod,co2} - CO₂ emission factor arising from production of wood-fuel (3.0400 tCO₂e/t charcoal and 0 tCO₂e/t wood)
- EF_{faf,prod,co2} - Non-CO₂ emission factor arising from production of alternative fuel (0)
- EF_{bio,prod,non-co2} – Non-CO₂ emission factor arising from production of wood-fuel (0.6195 tCO₂e/t charcoal and 0 tCO₂e/t wood)
- EF_{faf,prod,non-co2} - Non-CO₂ emission factor arising from production of alternative fuel (0)
- B_{bl,i,y} - Mass of woody biomass combusted in the baseline in year y (Wood cluster: 5.001 t wood/stove year and Charcoal cluster: 1.909 t charcoal /stove year)
- ΔB_{90%} - Lower bound of the 90% confidence interval of woody biomass savings per stove year (Wood cluster: 2.365 t wood/stove year and Charcoal cluster: 0.9021 t charcoal /stove year)

The DOE has assessed the application of the values for the above parameters in calculation of emission reductions and confirms that the PP has applied the values correctly.

Corresponding to the paragraph 280 and 281 of VVS version 07.0, Bureau Veritas Certification can confirm that:

- The monitoring has been carried out in accordance with the monitoring plan contained in the approved revised PDD.
- All parameters required by the monitoring plan have been sufficiently monitored and correctly listed. The monitored data for required parameters have been verified by checking the whole information flow.

3.5. Compliance with the calibration frequency requirements for measuring instruments (288)

The project activity does not involve direct measurement of parameters. Measuring equipment are only used when carrying out Kitchen Tests. The measuring equipment (a digital hanging scale) used in the Aging-kitchen tests carried out for this monitoring period, was calibrated. Calibration records (ref/17/) were provided as evidence.

Table 2 The calibration records of the weighing scale

Type	Serial number	Accuracy	Calibration date	Validity	Calibration entity
Kranwaage PCE – HS 50	401 2013	0.1Kg	15/04/2014	Yes	A

Entity A: G+B Kalibriertechnik GmbH /17/

3.6. Assessment of data and calculation of emission reductions (291)

A complete set of data for the specified monitoring period is available. The critical parameters used for the determination of the Emission Reductions for this project are stated and analysed



in section 3.4 of this report. The data pertaining to the above parameter are maintained in the identified records. All the data are in compliance with that stated in the Monitoring Report version 02 dated 12/05/2015.

As per the methodology Methodology for Improved Cook-stoves and Kitchen Regimes V.01 and the registered PDD, the emission reductions for the Project are calculated as the baseline emissions minus the project emissions and leakage.

$$ER_y = \sum BE_{iy} - \sum PE_{iy} - \sum Li_y$$

Based on this equation, the formulae for calculating baseline emission, Project emission and Leakage emissions, and all the known and fixed parameters, the PP has simplified the calculation ERs into three steps which have been reviewed as follow:

ER calculation step	DOE's review and conclusion
Step 1: Calculating emission reductions per stove year	The DOE has reviewed the method used to determine ERs per stove year per cluster by comparing the formulae used with the formulae in the methodology, and carried out independent calculations, applying the formulae and the known values. From the assessment, the DOE concludes that the method applied is inline with the methodology and the ER per stove year calculations (as provided in sheet ER_per_stove of the project database version 02) are correct. The following values have been applied: - Charcoal cluster (ER per stove) = 4.82 t CO₂e - Wood cluster (ER per stove) = 3.29 t CO₂e - Solar+OLI-c cluster (ER per stove per hh) = 6.36 tCO₂e - Solar+OLI-b cluster (ER per stove per hh) = 3.89 t CO₂e



Step 2: Calculation of stove years	Calculation of stove years has been integrated into ADES Salesforce system and the values, in terms of report, are automatically generated by Salesforce. The functioning of Salesforce was review in the previous (5th) verification cycle. The code is also available as an annex to the monitoring report. For verification the DOE assessed the credibility of the result obtained from the system by reviewing reports generated on site (refer to the assessment of total sale above), and considers the results to be reliable. The following values have been applied: <table><tr><th>Cluster</th><th>Stove years</th></tr><tr><td>WOOD Cluster</td><td>6,068</td></tr><tr><td>CHARCOAL Cluster</td><td>31,211</td></tr><tr><td>Solar+OLI-b</td><td>401</td></tr><tr><td>Solar+OLI-c</td><td>1,577</td></tr><tr><td>TOTAL</td><td>39,257</td></tr></table>	Cluster	Stove years	WOOD Cluster	6,068	CHARCOAL Cluster	31,211	Solar+OLI-b	401	Solar+OLI-c	1,577	TOTAL	39,257									
Cluster	Stove years																					
WOOD Cluster	6,068																					
CHARCOAL Cluster	31,211																					
Solar+OLI-b	401																					
Solar+OLI-c	1,577																					
TOTAL	39,257																					
Step 3: Calculation of emission reductions	Just as in the calculation of stove years in step 2 above, the ADES Salesforce system automatically calculates the emission reductions and generates the result in form of a report. For verification, the DOE has carried out independent calculation of emission reduction by multiplying the values obtained in step 1 and step 2 and negligible variation were seen as in the table below. <table><tr><th>Cluster</th><th>ERs (tCO2e) - PP</th><th>ERs (tCO2e) - DOE</th></tr><tr><td>WOOD Cluster</td><td>19,965</td><td>19,979.01</td></tr><tr><td>CHARCOAL Cluster</td><td>150,438</td><td>150,447.79</td></tr><tr><td>Solar+OLI-b</td><td>1,562</td><td>1,557.95</td></tr><tr><td>Solar+OLI-c</td><td>10,031</td><td>10,026.62</td></tr><tr><td>Leakage</td><td>-</td><td>-</td></tr><tr><td>TOTAL</td><td>181,996</td><td>182,011.37</td></tr></table> From the above assessment, the DOE considers the amount of ERs calculated by the PP to be credible.	Cluster	ERs (tCO2e) - PP	ERs (tCO2e) - DOE	WOOD Cluster	19,965	19,979.01	CHARCOAL Cluster	150,438	150,447.79	Solar+OLI-b	1,562	1,557.95	Solar+OLI-c	10,031	10,026.62	Leakage	-	-	TOTAL	181,996	182,011.37
Cluster	ERs (tCO2e) - PP	ERs (tCO2e) - DOE																				
WOOD Cluster	19,965	19,979.01																				
CHARCOAL Cluster	150,438	150,447.79																				
Solar+OLI-b	1,562	1,557.95																				
Solar+OLI-c	10,031	10,026.62																				
Leakage	-	-																				
TOTAL	181,996	182,011.37																				

[Comparison of ERs]

The total estimated ex ante emission reductions for this monitoring period (2014) according to the approved revised PDD is 93,945 tCO₂e. The corresponding actual emission reduction in the monitoring period as reported in the monitoring report and verified by the DOE is 181,996 tCO₂e in 2014. The actual emission reductions are 93.7% more than the estimates in the approved revised PDD.



The variation in emission reductions is due to a change in the following parameter estimates, which are deemed acceptable:

- a) Increase in the number of stoves produced and sold. In the approved revised PDD, it was estimated that by 2014, the project would have cumulatively sold a total of 53,410 stoves, with 48,069 eligible for counting of emission reductions. However, the actual cumulative number of stoves sold by 2014 is 64,170 with 58,657 being counted for emission reductions. This increase in the number of stoves sold leads to an increase in the number of stove years, hence the amount of emissions reduction.
- b) In the actual implementation of the project activity it was realized that some users combined the application of solar and efficient stoves (that is solar+Oli-c or solar+Oli-b) and the two clusters were created. This results in increased fuel saving, leading to an increase in emission reduction per stove years, and hence an increase in emission reduction.
- c) There has been a change in the fraction of NRB. In the approved revised PDD, a fraction of 49.3% was used to estimate emission reductions; however the actual fraction used is a default value of 72%. The default value was assessed and accepted in the previous issuances. An increase in the fraction of NRB also led to an increase in emission reduction per stove years and hence an increase in emission reduction.

The following changes in parameters as compared to the registered PDD also influence the amount of emissions reduction reported in this and future monitoring periods:

- d) When determining the value of EF_{pj.bio,non-co2} and EF_{bl.bio,non-co2}, the PP has applied the latest GWP for CH₄ and N₂O, valid from 01/01/2013 onwards (ref EB69 annex 3).
- e) Changes in the drop-off rates

Corresponding to the paragraph 291 of VVS version 07.0, Bureau Veritas Certification can confirm that:

- Data used for the determination of the emission reductions are available and monitored in accordance with the monitoring plan contained in the registered PDD.
- Information and data provided in the monitoring report have been cross-checked with other sources such as, inventories, purchase records, Staff list.
- Appropriate methods and formulae for calculating baseline emissions, project emissions and leakage have been followed.
- Assumptions, emission factors and default values that were applied in the calculations have been justified



3.7. Gold Standard Requirements – Sustainable Development Indicators

The Sustainable Development Indicators monitored on an ongoing basis included: Jobs created by ADES, Schools visited by ADES and Expenses for wood and charcoal. These indicators are assessed as follows:

Sustainable development indicators	DOE's assessment and conclusion
SD1) Jobs created by ADES Assessed every two years	The DOE confirms that the project continues to provide employment to the local people. Assessment of this indicator was done through a review of employment records for the centres in Fianarantsoa and Toliara, and interview with ADES Staff in Fianarantsoa and Toliara, during on site assessment. A list of employees has been provided (ref/20/). The DOE considers the indicator to have a positive score.
SD2) Schools visited by ADES Assessed every two years	The DOE confirms that the PP continues to raise environmental awareness through training and demonstration in schools. Assessment of this indicator was done through a visit to two schools in Toliara and interviews held with school representatives. The DOE concludes that the indicator is being monitored and continues to have a positive score. List of schools visited is provided (ref/21/).
SD3) Expenses for wood and charcoal Assessed every two years	The DOE concludes that this indicator has a positive score, through a review of the Kitchen survey and data provided by the PP. Refer to DOE's assessment of Kitchen survey under parameter (d) in section 3.4 above. The results of the survey indicate that households incur expenses in buying charcoal or wood. In cases where household do not spend money to buy wood fuel, then they have to spend time to find wood fuel. The DOE considers the project brings positive impact due to the savings achieved by the used of solar and/or efficient stoves. The stoves users visited during on site assessment, also confirmed that they have realised saving in terms of fuel.



4. VERIFICATION OPINION

Bureau Veritas Certification has performed the 6th periodic verification of ADES Solar and efficient stoves in Madagascar, Gold Standard Reference Number GS 464, which is located in Madagascar, and applying the Methodology for Improved Cook-stoves and Kitchen Regimes V.01. The verification was performed based on the requirements for Voluntary Offset Projects under the Gold Standard and the requirements set by CDM and relevant guidance provided by CMP and the CDM Executive Board.

The verification consisted of the following three phases: i) desk review of the project design, the baseline and monitoring plan; ii) follow-up interviews with project stakeholders; iii) resolution of outstanding issues and the issuance of the final verification report and opinion.

The management of ADES – Association pour le Développement de l'Energie Solaire with assistance from Foundation Myclimate, is responsible for the preparation of the GHG emissions data and the reported GHG emission reductions of the project on the basis set out within the monitoring plan contained in the approved revised PDD and monitoring plan. The development and maintenance of records and reporting procedures in accordance with that plan, including the calculation and determination of GHG emission reductions from the project, is the responsibility of the management of the project.

Bureau Veritas Certification has verified the project Monitoring Report version 02 dated 12/05/2015 for the reporting period as indicated below. Bureau Veritas Certification confirms that the project is implemented as described in the approved revised project design documents. Distributed equipment (solar and efficient cook-stoves) being essential for generating emission reductions run reliably and are calibrated appropriately. The monitoring system is in place and the Project is generating GHG emission reductions as a Gold Standard VER project.

Bureau Veritas Certification can confirm that the GHG emission reductions are calculated without material misstatements. Our opinion relates to the project's GHG emissions and resulting GHG emission reductions reported and related to the validated and registered project baseline, approved monitoring plan and its associated documents. Based on the evidence and information that are considered necessary to guarantee that GHG emission reductions are appropriately calculated, Bureau Veritas Certification confirms the following statement:

Reporting period:	01/01/2014 - 31/12/2014
Baseline emissions:	Integrated in the ER calculation formula
Project emissions:	Integrated in the ER calculation formula
Leakage emissions:	Integrated in the ER calculation formula
Emission Reductions:	181,996 t CO ₂ equivalents

Mr. Andrew Kinyanjui
Internal Technical Reviewer
18/06/2015

Mr. Samuel Mayieko
Team Leader
18/06/2015



5. REFERENCES

Documents reviewed:

- /1/ Approved revised PDD version 6.1 dated 19/06/2012, GS ref no.GS 464
- /2/ Monitoring Report version 01, dated 05 March 2015
- /3/ Monitoring Report version 02, dated 12/05/2015
- /4/ ER Calculation Spreadsheet version 02, dated 12 May 2015
- /5/ Methodology for Improved Cook-stoves and Kitchen Regimes V.01
- /6/ Validation and Verification Standard Version 07.0 dated 29/07/2013
- /7/ GS464_5th_FVR_4th_June_2014
- /8/ GS464_5th_MP_Issuance_Review_II round
- /9/ 150209_ADES_Project_Database_2014
- /10/ 150212_ADES_customer_database_2014_V01
- /11/ ADES Financial Audit report by Haja RAZAFIMAHAZO email: hrzafim@yahoo.com, Tel: 033 49 400 50
- /12/ 150226_ADES_Aging_KT_Oli-b_report_2014
- /13/ 150226_ADES_Aging_KT_solar_report_2014
- /14/ 150226_ADES_usage_survey_report_2014_V01
- /15/ 150211_ADES_Leakage_survey_report_2014
- /16/ 150209_ADES_KS_report_2014_V01
- /17/ Certificate of metrological authorization to G+B Kalibriertechnik GmbH with the valid period from 04/2014 to 04/2015
- /18/ Employment record for Rajaoniason Rijaniaina
- /19/ Employment record for Rasamy Duhamel Nixen
- /20/ List of ADES staff
- /21/ List of schools visited by ADES

**Persons interviewed:****ADES – Association pour le Développement de l’Energie Solaire**

/1/	Isabelle Marthaler	National Coordinator
/2/	Edgar Flury	Assistant National Coordinator
/3/	Faralahy Ramilson	Monitoring Manager CO2 Madagascar:
/4/	Fidy Andriamifidy	Director (ADES Tuléar)
/5/	BARINIRINA Herilalao Marie Cécile	Director (ADES Fianarantsoa)
/6/	RASOARIMALALA Ymelda Ella	Administrative & Financial officer (ADES Fianarantsoa)
/7/	RAVELONANOSY Mbolatiana	Chief Technician (ADES Fianarantsoa)
/8/	RANDRIAMIADANA Xavier	Animator (ADES Fianarantsoa)
/9/	RABEHARISOA Michella	Moderator (ADES Fianarantsoa)
/10/	RATSIMANARIZO Idealisoa Josoa	Moderator (ADES Fianarantsoa)
/11/	RANDRIAMAMPIANINA Odilon	Technician

End users

/12/	MAMY Soazy	Visited and interviewed
/13/	Therese	Visited and interviewed
/14/	Safidison	Visited and interviewed
/15/	Holda PASCAL	Visited and interviewed
/16/	PATRICK Maninto	Visited and interviewed
/17/	JASMINE Viviane	Visited and interviewed
/18/	ZARA Hamba	Visited and interviewed
/19/	JOSEPH Tsifandrihy	Visited and interviewed
/20/	Fara	Visited and interviewed
/21/	BANA François Xavier	Interviewed by phone
/22/	FIDELE Andry	Interviewed by phone
/23/	RASOA Helène	Interviewed by phone
/24/	Mr BOANA Idy	Interviewed by phone
/25/	MARA Tokisoa	Interviewed by phone
/26/	Mrs. Hanaty	Interviewed by phone
/27/	Mrs. Zoro	Interviewed by phone
/28/	Mrs. Antoniny	Interviewed by phone

Schools visited and interviews held

/29/	Razafitiana	Headmistress – EPP Tanambao II TSF-NORD (Tuléar)
/30/	Randimbimampionana	School Principal - Collège St Jean Baptiste de la Sale (Tuléar)



6. CURRICULA VITAE OF THE DOE'S VERIFICATION TEAM MEMBERS

Mr. Samuel Mayieko	Bureau Veritas Certification, Kenya	Team Leader, Climate Change Lead Verifier, He has a degree in Physics with over 7 years experience in renewable energy and climate change out of which 5 years have been in CDM. He has been trained on CDM verification, QMS (ISO 9001) and EMS (ISO 14001), as Lead auditor. He has been involved in validation and verification of CDM and Gold Standard projects.
Mr. Andrew Kinyanjui	Bureau Veritas Certification, Kenya	Technical Reviewer, Climate Change Lead Verifier. Graduated with Diploma in Chemical Engineering, he had 5 yrs experience in Industrial production before joining BV. He has obtained 7 years experience in management systems audits and training and more than 4 years experience in CDM validation / verification at BV. He obtained the certificate of CDM Lead Verifier certificate and Lead auditor for ISO 14001. He has conducted Validation / Verification for more than 10 CDM/GS Projects.
Mr. James Mwaniki	Bureau Veritas Certification, Kenya	Specialist supporting Technical Reviewer Graduate in Electrical Engineering with over 25 years of experience power generation and energy demand and distribution as well as in energy management audits. He is the technical expert & supported this Verification.



APPENDIX A: CDM PROJECT VERIFICATION PROTOCOL (Rev 08.2)

Table 1 Verification requirements based on VVS version 07.0 (EB 79 Annex 3), PS version 07.0 (EB 79 Annex 4), PCP version 07.0 (EB 79 Annex 5), and Guidelines for completing the Monitoring Report Form version 03.2 (EB 70 Annex 11)

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
Part I Cover Page					
(a) Is the title of the project activity provided?	MR		Provided as: ADES Solar and efficient stoves in Madagascar	OK	OK
(b) Is the reference number of the project activity provided?	MR		Provided as: GS 464	OK	OK
(c) Is the version number of the monitoring report indicated?	MR		Indicated as: version 1.0	OK	OK
(d) Is the completion date of the monitoring report provided in DD/MM/YYYY format?	MR		Provided as: 05 March 2015	OK	OK
(e) Is the registration date of the project activity provided in DD/MM/YYYY format?	MR		Not provided. However this is not a requirement as the project is a GS project	OK	OK
(f) Are the monitoring period number and duration of this monitoring period (first and last days included in DD/MM/YYYY format) provided?	MR		Provided as Period 6, and the date are indicated as (01/01/2014 - 31/12/2014)	OK	OK
(g) Are project participants indicated?	MR		Not provided. However this is not a requirement as the project is a GS project	OK	OK
(h) Is the host party(ies) indicated?	MR		Not provided. However this is not a requirement as the project is a GS project	OK	OK



VERIFICATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
(i) Are the sectoral scope(s) and applied methodology(ies) indicated?	MR		Not provided. However this is not a requirement as the project is a GS project	OK	OK
(j) Is the estimated amount of GHG emission reductions or net anthropogenic GHG removals by sinks for this monitoring period in the registered PDD indicated?	MR		Not provided. However this is not a requirement as the project is a GS project	OK	OK
(k) Are the actual GHG emission reductions or net anthropogenic GHG removals by sinks achieved in this monitoring period indicated?	MR		Not provided. However this is not a requirement as the project is a GS project	OK	OK
(l) Are the actual GHG emission reductions or net anthropogenic GHG removals by sinks achieved during the period up to 31 December 2012 indicated (if applicable)?	MR		Not provided. However this is not a requirement as the project is a GS project	OK	OK
(m) Are the actual GHG emission reductions or net anthropogenic GHG removals by sinks achieved during the period from 1 January 2013 onwards indicated (if applicable)?	MR		Not provided. However this is not a requirement as the project is a GS project	OK	OK
Part II Monitoring Report					
A. Description of project activity					
A.1 Purpose and general description of project activity					
A.1.1 Is the description of the project activity to be presented in this section a brief summary of the detailed description given in the section B.1	MR		Yes, A brief description of the project activity is provided (refer to pg 2 of the MR). However this is provided in section A.1 of the MR and not in B 1. This is acceptable	OK	OK

VERIFICATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
Implementation status of the project activity?			since the project is a GS project.		
A.1.2 Does this description include:					
A.1.2.1 Purpose of the project activity and the measures taken for GHG emission reductions or net anthropogenic GHG removals by sinks?	MR		Yes, From the MR, the purpose of the project activity is to locally produce and distribute solar and efficient cook stoves to people in Madagascar. (refer to pg 2 of the MR)	OK	OK
A.1.2.2 Brief description of the installed technology and equipments?	MR		Yes, From the MR three types of technologies are described: i. Solar thermal technologies (Solar box stove, E-solar box stove and Solar parabolic stove). The technology uses solar radiation to meet the thermal energy needs ii. Efficient wood stove (OLI-b, OLI-45b and OLI-60b). The technology burns less woody biomass to meet the same thermal energy need as the baseline technology iii. Efficient charcoal stove (OLI-c, OLI-45c (formerly OLI-G), OLI-60c). The technology burns less charcoal to meet the same thermal energy needs as the baseline stove.	OK	OK
A.1.2.3 Relevant dates for the project activity (e.g. construction, commissioning, continued operation periods, etc.)?	MR		Yes, The relevant dates are indicated as follows: Start date of project activity (workshops in Tuléar and Ejeda in operation): 27 August 2007 Opening of workshop in Morondava: May 2008	OK	OK

VERIFICATION REPORT



CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
			Opening of workshop in Morombe: October 2010 Production start of OLI-b stoves: May 2010 Production start of OLI-c stoves: December 2010 Official opening of workshop in Fianarantsoe: July 2011 Production start for OLI-45c (formerly OLI-G) stoves: May 2011 Opening of workshop in Majunga: November 2011 Opening of ADES sales point in Antananarivo: May 2012 Opening of new sales point in Antananarivo: June 2013 Opening of new production workshop in Fianarantsoa: November 2013		
A.1.2.4 Total GHG emission reductions or net anthropogenic GHG removals by sinks achieved in this monitoring period?	MR		Yes, In this monitoring period it is indicated that the project achieved 182,005 tCO ₂ e of emission reductions. (refer to pg 2 of the MR)	OK	OK
A.2 Location of project activity					



VERIFICATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
A.2.1 Is the information on the location of the project activity provided, including Host Party(ies), Region/State/Province, City/Town/Community, Physical/Geographical location etc.?	MR		Yes, Refer to pg 2 & 3 of the MR. Under section A.3 the location is provided as the entire country of Madagascar, Towns/cities where existing production and distribution centers are located, are indicated as follows: - Toliara (Tuléar): 23°21'S, 43°40'E - Ejeda: 24°21'S, 44°31'E - Morondava: 20°17'5"S, 44°19'3"E - Morombe: 21°44'56"S, 43°21'47"E - Majunga: 15°42'55.09"S, 46°19'8.42"E - Fianarantsoa: 21°27'12.07"S, 47°05'08.42"E - Antananarivo: 18°55'18.01"S, 47°31'05.58"E	OK	OK
A.3 Parties and project participant(s)					
A.3.1 Is the Party(ies) and project participant(s) involved in the project activity listed in the provided table?	MR		Yes, Refer to pg 2 of the MR. The parties and PP are provided as: Parties: Madagascar (host) and Switzerland (Annex 1) PPs: ADES – Association pour le Développement de l'Energie Solaire and Foundation Myclimate - the Climate Protection Partnership This information is consistent with the information in the registered PDD version 6.1 dated 19.06.2012	OK	OK



CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
A.4 Reference of applied methodology					
A.4.1 Is the exact reference (number, title, version) of the methodology(ies) indicated?	MR		Yes, refer to pg 6 section A.5 of the MR. The methodology is indicated as Methodology for Improved Cook-stoves and Kitchen Regimes V.01	OK	OK
A.4.2 Is the exact reference (number, title, version) of any tools and other methodologies to which the applied methodology(ies) refers indicated?	MR		N/A No tools or methodologies are referenced	OK	OK
A.5 Crediting period of project activity					
A.5.1 Are the type, start date and length of the crediting period corresponding to this monitoring period provided?	MR		Yes, Refer to pg 7 section A.7 of the MR. The start date of the crediting period is indicated as 01 January 2008, the length of crediting period as 7 years and the type of crediting period as renewable. The information is consistent with the registered PDD version 6.1 dated 19.06.2012, and the GS registry	OK	OK
B. Implementation of project activity					
B.1 Description of implemented registered project activity					
B.1.1 Is the description of the installed technology, technical processes and equipments provided, include diagrams where appropriate?	MR PS	248(a)	Yes, refer to pg 3 section A 4 Of the MR. A brief description of the technology with photos of the installed technology is provided. The PP has not included a description of technical process and any accompanying diagram. However, this is not a requirement of GS, in	OK	OK

VERIFICATION REPORT



CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
			addition, from the photos provided the verification team is able to understand the technology being installed in the project activity		
B.1.2 Is the information on the implementation and actual operation of the project activity, including relevant dates (e.g. construction, commissioning, continued operation periods, etc.) provided?	PS	248(b)	Yes, the PP has provided the information in section B.1 of the monitoring report. In this section of the monitoring report, the PP has provided the relevant dates since the start date of the project activity, information on the actual operation of the project activity and information on the impact on the applicability of the methodology. the project activity is in continuous operation. On-site assessment is has been carried out to confirm the information.	OK	OK
B.1.3 Is the description of: (i) the events or situations that occurred during the monitoring period that may impact the applicability of the methodology (ii) how the issues resulting from these events or situations have been addressed provided?	PS	248(c)	It is indicated in section B.1 of the monitoring report that there are no events that occurred during this monitoring period that impacted on the applicability of the applied methodology. This was confirmed during site visit	OK	OK
B.1.4 Have the project participants addressed the FARs identified during validation or previous verification(s)?	VVS	258	CAR: 1 FAR #1 has not been addressed For FAR # 2, the DOE observed that the condition of the older stoves (that is those that are older than 3 years) was not good. The kettles (outer covering for the stove) of such stoves were worn out. From interviews with the users, there DOE was informed that the condition for old stoves was not good, and most had been repaired (that is the outer covering had been replaced).	Not OK	OK Refer to resolution of CAR 1 in Table 3 below



VERIFICATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
B.1.5 Have the implementation and operation of the project activity been conducted in accordance with the description contained in the registered PDD?	VVS	271	The description provided under section B1 of the MR, on the implementation status of the project activity, indicates that the project has been implemented according to the description in the registered PDD. This was also confirmed during on-site assessment.	OK	OK
B.1.6 Are all physical features of the project activity in the registered PDD in place?	VVS	272	Yes. This was confirmed during on-site assessment	OK	OK
B.1.7 Have the project participants operated the project activity as per the registered PDD or any approved revised PDD?	VVS	272	The project participant has operated the project activity as per the approved revised PDD.	OK	OK
B.1.8 Was an on-site visit conducted?	VVS	272	On-site assessment is scheduled for 27 to 30 of April 2015	OK	OK
B.1.9 If an on-site visit is not conducted, is the rationale of the decision justified?	VVS	272	Not Applicable as on-site assessment will be carried out	OK	OK
B.2 Post registration changes			There are no post registration changes for this project activity. Therefore section B.2 of this protocol is not applicable	OK	OK
B.2.1 Temporary deviations from registered monitoring plan or applied methodology				OK	OK
B.2.1.1 Is it indicated whether any temporary deviations have been applied during this monitoring period?	MR		Not applicable	OK	OK
B.2.1.2 Is a description of the deviation(s) in accordance with applicable provisions	MR		Not applicable	OK	OK

VERIFICATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
in the Project standard provided?					
B.2.1.3 Are the reasons for the deviation(s), how it deviates from the monitoring plan and/or applied methodology(ies), the duration for which the deviation(s) is(are) applicable and justification on the conservativeness of the approach included in the description?	MR		<i>Not applicable</i>	OK	OK
B.2.1.4 For deviation(s) that require prior approval by the Board, are the date of approval and reference number included in the description?	MR		Not applicable	OK	OK
B.2.2 Corrections			Not applicable	OK	OK
B.2.2.1 Is it indicated whether any corrections to project information or parameters fixed at validation have been approved during this monitoring period or submitted with this monitoring report?	MR		Not applicable	OK	OK
B.2.2.2 In cases where the correction(s) and the revised PDD are approved prior to the submission of this monitoring report for request for issuance, are the approval date and reference number provided? Otherwise, are the version number and the completion date of the revised PDD	MR		Not applicable	OK	OK

VERIFICATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
provided?					
B.2.3 Permanent changes from registered monitoring plan or applied methodology			Not applicable	OK	OK
B.2.3.1 Is it indicated whether any permanent changes from the registered monitoring plan or applied methodologies have been approved during this monitoring period or submitted with this monitoring report?	MR		Not applicable	OK	OK
B.2.3.2 In cases where the change(s) and the revised PDD are approved prior to the submission of this monitoring report for request for issuance, are the approval date and reference number provided? Otherwise, are the version number and the completion date of the revised PDD provided?	MR		Not applicable	OK	OK
B.2.4 Changes to project design of registered project activity			Not applicable	OK	OK
B.2.4.1 Is it indicated whether any changes to the project design of the project activity have been approved during this monitoring period or submitted with this monitoring report?	MR		Not applicable	OK	OK
B.2.4.2 In cases where the change(s) and the revised PDD are approved prior to the	MR		Not applicable	OK	OK



VERIFICATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
submission of this monitoring report for request for issuance, are the approval date and reference number provided? Otherwise, are the version number and the completion date of the revised PDD provided?					
B.2.5 Changes to start date of crediting period			Not applicable	OK	OK
B.2.5.1 Is it indicated whether any changes to the start date of the crediting period have been approved during this monitoring period?	MR		Not applicable	OK	OK
B.2.5.2 In cases where the changes and the revised PDD are approved prior to the submission of this monitoring report for request for issuance, are the approval date and reference number provided?	MR		Not applicable	OK	OK
B.2.6 Types of changes specific to afforestation or reforestation project activity			Not applicable	OK	OK
B.2.6.1 Is it indicated whether any changes specific to afforestation or reforestation project activities have been applied during this monitoring period based on applicable provisions in the Project standard that do not require prior approval by the Board?	MR		Not applicable	OK	OK

VERIFICATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
B.2.6.2 If changes were applied, are the version number and the completion date of the revised PDD provided?	MR		Not applicable	OK	OK
C. Description of monitoring system					
C.1 General requirements					
C.1.1 Have project participants described the monitoring system and provided line diagrams (graphical schemes) showing all relevant monitoring points?	MR PS	- 250	Section C of the MR provides a description of the monitoring system. It also refers to a Monitoring Manual, which was provided to the DOE in the previous verification cycle. The Monitoring Manual has been reviewed. From the information provided, and the nature of the project activity which deals with many individual subsystems (cook stoves), the validation team determines that a diagrams (graphical schemes) showing all relevant monitoring points is not applicable for the project activity. Other necessary monitoring activities have been adhered to.	OK	OK
C.1.2 Does this description where appropriate include data collection procedures (information flow including data generation, aggregation, recording, calculations and reporting), organizational structure, roles and responsibilities of personnel, and emergency procedures for the monitoring system?	MR PS	- 250	A description of the roles and responsibilities, data collection procedures, organizational structure is provided in the Monitoring Manual. This was further confirmed during on-site assessment.	OK	OK
C.1.3 Is the monitoring plan of the project activity in	VVS	274	Yes, Monitoring plan is inline with the applied	Not	OK



VERIFICATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
accordance with the applied methodology including applicable tool(s)?			methodology ref. Methodology for Improved Cook-stoves and Kitchen Regimes V.01 Total sales records are available (Sales force) and the project database is maintained and updated as required by the applied methodology. CAR: 2 A detailed customer database is available. Whereas the database has been populated with kitchen tests (both new and aging kitchen tests), the database does not contain kitchen surveys from 2009 onwards. (Refer to the monitoring requirement of the applied methodology on pg 22 point number 2 and also the revised approved PDD pg 39). Kitchen surveys and usage survey have been carried out as required by the methodology and as indicated in the revised approved PDD. The monitoring/usage survey report and survey data have been provided and reviewed. The aging kitchen tests for Oli-b and solar stoves have been carried out every 2 years as required. The previous test for Oli-b was done in 2012 and for Solar stoves was 2010 and 2012. The next tests were carried out in 2014. Data and reports have been provided and reviewed. Further confirmation was done during on-site assessment. No aging kitchen test was required for Oli-c in this monitoring period since it was carried out in 2013 and was assessed in the 5th verification cycle. The PP has not carried out a baseline monitoring KT.	OK	Refer to resolution of CAR:2 in Table 3 below

VERIFICATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
			This is not required as the PP has a fixed baseline Leakage test is carried out every 2 years. In this monitoring period a leakage survey has been carried out. Data and report have been provided and reviewed. The information was further confirmed during on-site assessment.		
C.1.4 For monitoring aspects that are not specified in the methodology, particularly in the case of small-scale methodologies (e.g. additional monitoring parameters, monitoring frequency and calibration frequency), are there any issues which may enhance the level of accuracy and completeness of the monitoring plan and should bring to the attention of the Board?	VVS	276	No applicable	OK	OK
C.1.5 Has the monitoring plan been properly implemented and followed by the project participants?	VVS	279(a)	Yes	OK	OK
C.1.6 Have all parameters stated in the monitoring plan and relevant Board decisions been monitored and updated as applicable, including:	VVS	279(b)		-	-
C.1.6.1 Project emission parameters?	VVS	279(b)	The following parameters stated in the monitoring plan are reported: 1) Non-renewability of woody biomass fuel in the project	OK	OK



VERIFICATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
			in year y 2) Mass of woody biomass combusted in the project in year y 3) The mass of alternative fuel I combusted in the project in year y 4) Percentage of stoves of age z remaining in use in year y 5) Adjustment to values of B_{pj,y} and AF_{pj,i,y} for stoves of age x 6) Adjustment to values of B_{pj,,y} and AF_{pj,i,y} for new stove models 7) Similar new project activity in the project area 8) Leakage (wood cluster) 9) Leakage (charcoal cluster) 10) Incentive scheme to surrender charcoal baseline stove The PP has also reported on the monitoring of the total stove sales		
C.1.6.2 Baseline emission parameters?	VVS	279(b)	A fixed baseline is applied in this project activity and therefore baseline parameters are fixed and have been verified in previous verifications.	OK	OK
C.1.6.3 Leakage parameters?	VVS	279(b)	Leakage has been reported as zero according to the outcome of the leakage survey, which has been	OK	OK

VERIFICATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
			reviewed.		
C.1.6.4 Management and operational system: the responsibilities and authorities for monitoring and reporting are in accordance with the responsibilities and authorities stated in the monitoring plan?	VVS	279(b)	The responsibility and authority reported in the MR are in line with the monitoring plan. This has further been confirmed through communication with relevant personnel and also during on-site assessment.	OK	OK
D. Data and parameters					
D.1 Data and parameters fixed ex ante or at renewal of crediting period			The following parameters are fixed ex ante and are indicated in the MR: - CO₂ emission factor arising from use of wood-fuel in baseline scenario (EF_{bl.bio,co2}) = 1.7472 tCO₂/t wood and 3.3040 tCO₂/t charcoal - CO₂ emission factor arising from use of wood-fuel in project scenario (EF_{pj.bio,co2}) = 1.7472 tCO₂/t wood and 3.3040 tCO₂/t charcoal - CO₂ emission factor arising from use of alternative fuel (EF_{f,co2}) = 0.8136 tCO₂/t LPG - Non-CO₂ emission factor arising from use of wood-fuel in baseline scenario (EF_{bl.bio,non-co2}) = 0.1356 tCO_{2e}/t wood and 0.1563 tCO_{2e}/t charcoal - Non-CO₂ emission factor arising from use of wood-fuel in project scenario (EF_{pj.bio,non-co2}) = 0.1356 tCO_{2e}/t wood and 0.1563 tCO_{2e}/t charcoal	OK	OK

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
			- Non-CO2 emission factor arising from use of alternative fuel (EFaf, non-co2) = 0.0064 tCO2e/t LPG - CO2 emission factor arising from production of wood-fuel (EFbio,prod,co2) = 3.0400 tCO2e/t charcoal and 0 tCO2e/t wood - Non-CO2 emission factor arising from production of alternative fuel (EFaf,prod,co2) = 0 - Non-CO2 emission factor arising from production of alternative fuel (EFbio,prod,non-co2) = 0.6195 tCO2e/t charcoal and 0 tCO2e/t wood - Non-CO2 emission factor arising from production of wood-fuel (EFaf,prod,non-co2) = 0 - Mass of woody biomass combusted in the baseline in year y (Bbl,i,y) = 5.001 t wood/stove year and 1.909 t charcoal /stove year - Lower bound of the 90% confidence interval of woody biomass savings per stove year ($\Delta B_{90\%}$) = 2.365 t wood/stove year and 0.9021 t charcoal /stove year These parameters as reported in the MR have been cross checked with the registered PDD.		
D.1.1 For “Purpose of data”, is one of the following options chose: (a) Calculation of baseline emissions or baseline net GHG removals by sinks; (b) Calculation of project emissions or actual net GHG removals by	MR		Purpose of data is not stated. However this not a requirement under GS	OK	OK



VERIFICATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
sinks; (c) Calculation of leakage?					
D.1.2 For "Value(s) applied", if applicable, is one table used to report multiple values referring to the same data and parameter? If necessary, are reference(s) to electronic spreadsheets used?	MR		Yes, Refer to D1 above	OK	OK
D.1.3 Is the source of data provide and/or identified?	PS	250(d)	Yes The source of data for each of the above parameter is indicated as follows: EFbl.bio,co2, EFpj.bio,co2, EFaf,co2, EFbl.bio,non-co2, EFpj.bio,non-co2, EFaf, non-co2 and EFbio,prod,non-co2 are derived from IPCC default values. EFbio,prod,co2 is a country specific value obtained from Girard, P., Rousset, P, Vergnet, A., Rasamindisa, A., 1998. Comparing forestry wood species for the charcoal supply of Antananarivo city, Madagascar, Boiling Point, Issue 40, Household energy and health. (http://www.hedon.info/BP40_ComparingForestryWoodSpeciesForTheCharcoalSupply?bl=y) Bbl,i,y is source from January 2012 KT ΔB90% source from January 2012 KT The data source for the above parameters have been cross checked with the registered PDD and previous verification reports and where applicable the relevant	OK	OK

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
			websites (CDM and IPCC websites)		
D.1.4 Is information about appropriate emission factors, IPCC default values and any other reference values that have been used in the calculation of GHG emission reductions or net GHG removals provided?	PS	250(g)	Yes Information on appropriate emission factors and IPCC default values has been provided. Noteworthy is the global warming potential for N ₂ O and CH ₄ where values applicable for second commitment period have been applied in line with CDM EB63 annex 3	OK	OK
D.2 Data and parameters monitored			The following monitored parameters are reported: - Number of stoves sold per cluster (Total sales record) - Non-renewability of woody biomass fuel in the project in year y (X_{nrb,pj,y}) - Mass of woody biomass combusted in the project in year y (B_{pj,i,y}) - Mass of alternative fuel i combusted in the project in year y (A_{Fpj,i,y}) - Percentage of stoves of age z remaining in use in year y (U_{agez,y}) - Adjustment to values of B_{pj,y} and A_{Fpj,i,y} for stoves of age x (A_{gez}) - Adjustment to values of B_{pj,i,y} and A_{Fpj,i,y} for new stove models (New Stove B_{pj,i,y} and A_{Fpj,i,y}) - Similar new project activity in the project area	OK	OK

VERIFICATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
			- Number of efficient charcoal stoves sold at discount - Adjustment factor for seasonal and weekly variation of biomass fuel consumption (Fvar) - Percentage of saved wood used for another purpose (LEy (wood)) - Percentage of saved charcoal used for another purpose (LEy (charcoal))		
D.2.1 For "Purpose of data", is one of the following options chose: (a) Calculation of baseline emissions or baseline net GHG removals by sinks; (b) Calculation of project emissions or actual net GHG removals by sinks; (c) Calculation of leakage?	MR		Purpose of data is stated for each of the respective parameters as follows: - Total Sales Record - Calculation of stove years - Xnrb,pj,y - Baseline and project emissions calculation - Bpj,i,y - Project emissions calculations - AFpj,i,y - Project emissions calculations - Usagez,y - Baseline and project emissions - Agez - Project emission calculation - New Stove Bpj,i,y and AFpj,i,y - Project emissions calculation - Similar new project activity in the project area - Avoid double counting - Incentive scheme to surrender charcoal baseline stove - Leakage emissions calculations - Fvar - Baseline and project emission calculation	OK	OK

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl																																																																						
			- LEy (wood) - Leakage emissions calculation - LEy (charcoal) - Leakage emissions calculation																																																																								
D.2.2 For “Value(s) of monitored parameter”, if applicable, is one table used to report multiple values referring to the same data and parameter? If necessary, are reference(s) to electronic spreadsheets used?	MR		The following are the reported values for each of the above parameters: Total sales record <table><tr><th>Year</th><th colspan="6">number of stoves</th></tr><tr><th>Type</th><th>Box</th><th>OLI-45b</th><th>OLI-45c</th><th>OLI-b</th><th>OLI-c</th><th>Parabolic</th></tr><tr><td>2008</td><td>1384</td><td>0</td><td>0</td><td>0</td><td>0</td><td>54</td></tr><tr><td>2009</td><td>617</td><td>0</td><td>0</td><td>0</td><td>0</td><td>13</td></tr><tr><td>2010</td><td>1408</td><td>0</td><td>0</td><td>567</td><td>160</td><td>21</td></tr><tr><td>2011</td><td>1338</td><td>0</td><td>225</td><td>1103</td><td>3728</td><td>109</td></tr><tr><td>2012</td><td>1589</td><td>74</td><td>656</td><td>1238</td><td>6580</td><td>146</td></tr><tr><td>2013</td><td>1318</td><td>93</td><td>525</td><td>1817</td><td>11507</td><td>106</td></tr><tr><td>2014</td><td>594</td><td>91</td><td>676</td><td>3584</td><td>17255</td><td>86</td></tr><tr><td>TOTAL</td><td>8248</td><td>258</td><td>2082</td><td>8309</td><td>39230</td><td>535</td></tr></table> CL: 1 A comparison between the values reported in this monitoring period and the previous period (5th cycle, refer to the monitoring report version 5.0, 02 July 2014) show that there is a disparity in the number of stoves reported. The number of stoves reported in this monitoring period for the following years is different from the numbers reported in the previous period (5th cycle)	Year	number of stoves						Type	Box	OLI-45b	OLI-45c	OLI-b	OLI-c	Parabolic	2008	1384	0	0	0	0	54	2009	617	0	0	0	0	13	2010	1408	0	0	567	160	21	2011	1338	0	225	1103	3728	109	2012	1589	74	656	1238	6580	146	2013	1318	93	525	1817	11507	106	2014	594	91	676	3584	17255	86	TOTAL	8248	258	2082	8309	39230	535	Not OK	OK Refer to resolution of CL:1 and CL:2 in Table 3 below
Year	number of stoves																																																																										
Type	Box	OLI-45b	OLI-45c	OLI-b	OLI-c	Parabolic																																																																					
2008	1384	0	0	0	0	54																																																																					
2009	617	0	0	0	0	13																																																																					
2010	1408	0	0	567	160	21																																																																					
2011	1338	0	225	1103	3728	109																																																																					
2012	1589	74	656	1238	6580	146																																																																					
2013	1318	93	525	1817	11507	106																																																																					
2014	594	91	676	3584	17255	86																																																																					
TOTAL	8248	258	2082	8309	39230	535																																																																					

VERIFICATION REPORT



CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl																								
			- number solar box reported for year 2008 - number of Oli b and Oli c reported for year 2010 - number of solar box, Oli b, Oli c and Parabolic for year 2011 and 2012 - number of Oli 45 b, Oli 45c, Oli b, Oli c and Parabolic for the year 2013 The PP is requested to clarify the disparity in these values CL: 2 a) For the stove sales made in 2014, a comparison of the numbers reported in the monitoring report on pg 7 and the financial audit report, shows a difference in the number of stoves reports as follows: <table><tr><th>Type</th><th>Box</th><th>OLI - 45b</th><th>OLI-45c</th><th>OLI - 60b</th><th>OLI-b</th><th>OLI-c</th><th>Parabolic</th></tr><tr><td>Monitoring report</td><td>621</td><td>113</td><td>831</td><td>63</td><td>3847</td><td>18967</td><td>99</td></tr><tr><td>Financial report</td><td>616</td><td>116</td><td>832</td><td>57</td><td>4056</td><td>19763</td><td>100</td></tr></table> b) During on site assessment, it was noted that the number of stoves counted for emission reductions as generated by sales force on site is different from the	Type	Box	OLI - 45b	OLI-45c	OLI - 60b	OLI-b	OLI-c	Parabolic	Monitoring report	621	113	831	63	3847	18967	99	Financial report	616	116	832	57	4056	19763	100		
Type	Box	OLI - 45b	OLI-45c	OLI - 60b	OLI-b	OLI-c	Parabolic																						
Monitoring report	621	113	831	63	3847	18967	99																						
Financial report	616	116	832	57	4056	19763	100																						

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl																		
			number reported in the monitoring report for the same period, as follows: <table border="1"> <thead> <tr> <th>Type</th><th>Box</th><th>OLI-45c</th><th>OLI-b</th><th>OLI-c</th><th>Parabolic</th></tr> </thead> <tbody> <tr> <td>Monitoring report</td><td>594</td><td>676</td><td>3584</td><td>17255</td><td>86</td></tr> <tr> <td>On-sites sales force report</td><td>593</td><td>672</td><td>3600</td><td>17242</td><td>87</td></tr> </tbody> </table> It was also noted that the total number of stoves not counted was 5514 against 5508 in the monitoring report. The PP is requested to clarify the disparities in the numbers being reported and claiming emissions. Xnrb,pj,y – a default value of 72.0%, is used. The value has been cross checked with the CDM website Bpj,i,y - as value of 2.499 t wood/stove year for Wood cluster and 0.929 t charcoal /stove year for Charcoal cluster are used. The values are sourced from the latest KT AFpj,i,y – Not applicable as Kitchen Survey did not reveal the use of alternative fuels. Usagez,y – values obtained from usage survey have been applied for solar box and oli b	Type	Box	OLI-45c	OLI-b	OLI-c	Parabolic	Monitoring report	594	676	3584	17255	86	On-sites sales force report	593	672	3600	17242	87		
Type	Box	OLI-45c	OLI-b	OLI-c	Parabolic																		
Monitoring report	594	676	3584	17255	86																		
On-sites sales force report	593	672	3600	17242	87																		

VERIFICATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
D.2.3 Are the values of the monitored parameter for the purpose of calculating GHG emission reductions or net GHG removals provided? Where data are measured continuously, are they presented using an appropriate time interval? For default values (such as an IPCC value), where it is ex post confirmed, is the most recent value applied?	PS	250(a)	Yes, refer above.		
D.2.4 Is the equipment used to monitor each parameter described, including details on accuracy class, and calibration information (frequency, date of calibration and validity), if applicable as per monitoring plan?	PS	250(b)	Not applicable.	OK	OK
D.2.5 Is the equipment used for monitoring is controlled and calibrated in accordance with the monitoring plan, the applied methodology, the Board guidance, local/national standards, or as per the manufacturer's specification?	VVS	279(c)	Not applicable.	OK	OK
D.2.6 Is the calibration of those measuring equipments that have an impact on the claimed emission reductions conducted by the project participants at a frequency specified in the applied monitoring methodology and/or the monitoring plan?	VVS	282	Yes. In this project activity weighing scales are used and have been calibrated before use.	OK	OK
D.2.7 If, during verification of a certain monitoring period, the calibration has been delayed	VVS	283	Not applicable	OK	OK

VERIFICATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
and the calibration has been implemented after the monitoring period in consideration (i.e. the results of delayed calibration are available), is the following conservative approach adopted in the calculation of emission reductions:					
D.2.7.1 Applying the maximum permissible error of the instrument to the measured values taken during the period between the scheduled date of calibration and the actual date of calibration, if the results of the delayed calibration do not show any errors in the measuring equipment, or if the error is smaller than the maximum permissible error?	VVS	283(a)	Not applicable	OK	OK
D.2.7.2 Applying the error identified in the delayed calibration test, if the error is beyond the maximum permissible error of the measuring equipment?	VVS	283(b)	Not applicable	OK	OK
D.2.8 Has the error has been applied:	VVS	284	Not applicable	OK	-
D.2.8.1 In a conservative manner, such that the adjusted measured values of the delayed calibration shall result in fewer claimed emission reductions?	VVS	284(a)	Not applicable	OK	OK
D.2.8.2 For all measured values taken during the period between the scheduled date	VVS	284(b)	Not applicable	OK	OK



VERIFICATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
of calibration and the actual date of calibration.					
D.2.9 In cases where the results of the delayed calibration are not available, or the calibration has not been conducted at the time of verification, prior to finalizing verification, were the project participants requested to conduct the required calibration have the project participants calculated the emission reductions conservatively using the approach mentioned in item “D.2.7” above?	VVS	285	Not applicable	OK	OK
D.2.10 In cases where it is not possible for the project participants to conduct the calibration at a frequency specified by either the applied methodology, guidance provided by the Board, and/or the registered monitoring plan due to reasons beyond the control of PPs, are the requirements for post registration changes, in section 9.5 of the VVS, followed?	VVS	286	Not applicable	OK	OK
D.2.11 In cases where neither the monitoring methodology nor the monitoring plan specify any requirements for calibration frequency for measuring equipments, are the equipments calibrated either in accordance with the specifications of the local/national standards, or as per the	VVS	287	Not applicable	OK	OK

VERIFICATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
manufacturer's specification? If neither local/national standards nor the manufacturer's specification are available, were international standards used?					
D.2.12 Is it described how the parameters are measured/calculated and the measurement and recording frequency?	PS	252(c)	Yes	OK	OK
D.2.13 Are monitoring results consistently recorded as per approved frequency?	VVS	279(d)	Yes	OK	OK
D.2.14 Is the source of data (e.g. logbooks, daily records, surveys, etc.) provide and/or identified?	PS	252(d)	Yes The sources of data for the above parameters are indicated as follows: - Total Sales Record - ADES Salesforce database - Xnrb,pj,y - CDM default value for Madagascar: http://cdm.unfccc.int/DNA/fNRB/index.html - Bpj,i,y - Kitchen Test - AFpj,i,y - Kitchen Test - Usagez,y - Usage survey - Agez - Aging-Stove Kitchen Test - New Stove Bpj,i,y and AFpj,i,y - New-Stove Kitchen Test - Incentive scheme to surrender charcoal baseline stove	OK	OK

VERIFICATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
			- ADES financial records		
D.2.15 Where relevant is the calculation method of the parameter provided?	PS	252(e)	No applicable.	OK	OK
D.2.16 Are the QA/QC procedures applied described (if applicable per monitoring plan)?	PS	252(f)	Yes, however refer to above CLs	Not OK	OK
D.2.17 Have quality assurance and quality control procedures been applied in accordance with the monitoring plan or the revised monitoring plan?	VVS	279(e)	Yes, however refer to above CLs	Not OK	OK
D.2.18 Is information about appropriate emission factors, IPCC default values and any other reference values that have been used in the calculation of GHG emission reductions or net GHG removals provided?	PS	252(g)	Not applicable since no monitored parameters are sourced from IPCC values.	OK	OK
D.3 Implementation of sampling plan					
D.3.1 Is a description provided on how project participants implemented the sampling efforts and surveys for those data and parameters according to the sampling plan, Include:	MR		Yes A description of sampling efforts and survey for Monitoring and usage survey has been provided and reviewed.	OK	OK
D.3.1.1 Description of implemented sampling design?	MR		On site interviews have been used to confirm the implementation of the sampling design	OK	OK

VERIFICATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
D.3.1.2 Collected data (electronic spreadsheets may be attached and referenced)?	MR		Data spreads sheets for the Surveys and KTs have been provided	OK	OK
D.3.1.3 Analysis of the collected data?	MR		The data has been analyzed and reports generated. The reports have been reviewed	OK	OK
D.3.1.4 Demonstration on whether the required confidence/precision has been met?	MR		This has been done	OK	OK
E. Calculation of emission reductions or GHG removals by sinks					
E.1 Calculation of baseline emissions or baseline net GHG removals by sinks					
E.1.1 Are the sample calculations for all formulae used and calculation of baseline emissions or baseline net GHG removals by sinks provided, applying actual values?	MR PS	- 256(a)	No need for separate calculation of baseline emissions. Baseline emissions calculation formula is integrated in the ER calculation formula.	OK	OK
E.1.2 Are the electronic spreadsheets to present full calculations in the monitoring report attached?	MR		Yes CL: 3 In the project database, a spreadsheet is provided (ref stove_years_2014) showing a summary of the stove years for 2014. The PP is requested to provide data from which the summary is extracted.	Not OK	OK, Refer to resolution of CL:3 in Table 3 below

VERIFICATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl									
E.2 Calculation of project emissions or actual net GHG removals by sinks														
E.2.1 Are the sample calculations for all formulae used and calculation of project emissions or actual net GHG removals by sinks provided, applying actual values?	MR PS	- 256(b)	No need for separate calculation of project emissions. Project emissions calculation formula is integrated in the ER calculation formula.	OK	OK									
E.2.2 Are the electronic spreadsheets to present full calculations in the monitoring report attached?	MR		Refer to CL 1 above	Pending CL 1	OK									
E.3 Calculation of leakage														
E.3.1 Are the sample calculations for all formulae used and calculation of leakage provided, applying actual values?	MR PS	256(c)	No need for separate calculation of leakage emissions. Leakage emissions is integrated in the ER calculation formula.	OK	OK									
E.3.2 Are the electronic spreadsheets to present full calculations in the monitoring report attached?	MR		Refer to CL 1 above	Pending CL 1	OK									
E.4 Summary of calculation of emission reductions or net anthropogenic GHG removals by sinks														
E.4.1 Are the results of above sections summarized and GHG emission reductions or net anthropogenic GHG removals by sinks for this monitoring period presented, using the provided table?	MR PS	- 256(d)	Yes Provided as: <table><tr><td>Year (2014)</td><td>Stove years</td><td>ERs (tCO2e)</td></tr><tr><td>WOOD Cluster</td><td>6,071</td><td>19,973</td></tr><tr><td>CHARCOAL Cluster</td><td>31,213</td><td>150,449</td></tr></table>	Year (2014)	Stove years	ERs (tCO2e)	WOOD Cluster	6,071	19,973	CHARCOAL Cluster	31,213	150,449	OK	OK
Year (2014)	Stove years	ERs (tCO2e)												
WOOD Cluster	6,071	19,973												
CHARCOAL Cluster	31,213	150,449												



VERIFICATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS				Draft Concl	Final Concl
			Solar+OLI-b	405	1,575			
			Solar+OLI-c	1,574	10,008			
			Leakage	-	-			
			TOTAL	39,263	182,005			

VERIFICATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS			Draft Concl	Final Concl			
E.4.2 Is a complete set of data for the specified monitoring period is available?	VVS	290(a)	Refer to CL 1 above			Pending CL 1				
E.4.3 Has information provided in the monitoring report been cross-checked with other sources such as plant log books, inventories, purchase records, laboratory analysis?	VVS	290(b)	Yes			OK	OK			
E.4.4 Have calculations of baseline emissions, and project activity emissions and leakage, as appropriate, been carried out in accordance with the formulae and methods described in the monitoring plan and the applied methodology document?	VVS	290(c)	Yes			OK	OK			
E.4.5 Have any assumptions used in emission calculations been justified?	VVS	290(d)	Yes			OK	OK			
E.4.6 Have appropriate emission factors, IPCC default values and other reference values been correctly applied?	VVS	290(e)	Yes			OK	OK			
E.5 Comparison of actual emission reductions or net anthropogenic GHG removals by sinks with estimates in registered PDD										
E.5.1 Is a comparison of actual GHG emission reductions or net anthropogenic GHG removal of the project activity achieved during this monitoring period with the estimates in the registered PDD provided?	MR PS	- 257	Yes Provided as: <table><tr><td>Item</td><td>Values applied in ex-ante calculation of the registered</td><td>Actual values reached during the monitoring</td></tr></table>			Item	Values applied in ex-ante calculation of the registered	Actual values reached during the monitoring	OK	OK
Item	Values applied in ex-ante calculation of the registered	Actual values reached during the monitoring								

VERIFICATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS			Draft Concl	Final Concl
				CDM-PDD	period		
			Emission reductions (tCO ₂ e)	2014: 93,945	2014: 182,005		
E.6 Remarks on difference from estimated value in registered PDD							
E.6.1 For any registered CDM project activity, except A/R project activities, have project participants explained the cause of any increase in the actual GHG emission reductions achieved during the current monitoring period (e.g. higher water availability, higher plant load factor, etc.), including all information (i.e. data and/or parameters) that is different from that stated in the registered PDD?	MR PS	- 258	The actual emission reductions in this monitoring period are much higher compared to the estimates in the registered PDD. An explanation for the difference has been provided as: 1. Higher fuel savings during implementation as compared to the PDD, due to combined application (solar box + efficient stove) 2. More stove sales in the actual implementation than was forecast in the PDD 3. Lower drop off rate than was forecast in the PDD 4. A higher NRB fraction than was applied in the PDD			OK	OK
E.7 Actual emission reductions or net anthropogenic GHG removals by sinks during the first commitment period and the period from 1 January 2013 onwards							
E.7.1 If the monitoring period starts before 31 December 2012 and ends anytime thereafter, are actual GHG emission	MR		This monitoring period fall in the second commitment period.			OK	OK

VERIFICATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
reductions or net anthropogenic GHG removals by sinks achieved for the following two periods provided respectively? (a) Up to 31 December 2012 (1st commitment period); (b) From 1 January 2013 onwards.					
E.7.2 Is it ensured that the achieved GHG emission reductions or net anthropogenic GHG removals by sinks are calculated proportionally for each period? In cases where annual caps were applied in the calculations, is it ensured that the annual caps are pro-rated to each period?	MR		Not applicable.	OK	OK
F. GS Requirements					
F.1 Have the social and economic impact of the project been investigated biannually and an assessment made of its contribution, positive or otherwise, to sustainable development in the area as per the frequency defined in the PDD?	GS		Monitoring of the following SDIs has been reported in the MR: SD 1) Jobs created by ADES SD 2) Schools visited by ADES SD 3) Expenses for wood and charcoal The indicators have been assessed on-site through a review of records and interviews with representatives of a sample of schools visited during on site assessment.	OK	OK
F.2 Are there any changes to the key sustainable development indicators?	GS		The SDIs have been reported and observed to have a positive change	OK	OK



VERIFICATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
F.3 Were mitigation/compensation measures achieved and implemented according to the success indicators as established in the monitoring plan(s)?	GS		No applicable	OK	OK

Table 3 Resolution of Corrective Action /Clarification / Forward Action Requests

Draft report clarifications and corrective action requests by verification team	Ref. to checklist question in table 1	Summary of project participant response	Verification team conclusion
CAR: 1 FAR #1 has not been addressed	VVS 258	FAR#1 from GS issuance review states: „FAR #1: The PP is requested to submit the English translation of surveys assessment sheet (xls) and Kitchen Survey Questionnaire for next verification.“ Kitchen Survey Report 2014 and corresponding analysis Excel file have been translated into English and are submitted to the DOE.	The Kitchen Survey Report 2014 and corresponding analysis Excel file have been translated into English and have been reviewed. The results are considered acceptable CAR 1 is closed.
CAR: 2 A detailed customer database is available. Whereas the database has been populated with kitchen tests (both new and aging kitchen tests), the database does not contain kitchen surveys from 2009 onwards. (Refer to the monitoring requirement of the applied methodology on pg 22 point number 2 and also the revised approved PDD pg 39).	VVS 274	As already clarified in earlier verifications, the customer database is not populated with all Kitchen Survey Data Sheets, because this would be too many. Alone for 2014 we have KS data on 8 different worksheets. To include all worksheets from all project years in the Customer Database would be confusing. Therefore only a summary for KS fuel consumption is included in the Customer Database and other KS results are submitted in a	The response has been reviewed and is acceptable. CAR 2 is closed.



VERIFICATION REPORT

Draft report clarifications and corrective action requests by verification team	Ref. to checklist question in table 1	Summary of project participant response	Verification team conclusion
		separate Excel file per monitoring period.	
CL: 1 A comparison between the values reported in this monitoring period and the previous period (5th cycle, refer to the monitoring report version 5.0, 02 July 2014) show that there is a disparity in the number of stoves reported. The number of stoves reported in this monitoring period for the following years is different from the numbers reported in the previous period (5th cycle) - number solar box reported for year 2008 - number of Oli b and Oli c reported for year 2010 - number of solar box, Oli b, Oli c and Parabolic for year 2011 and 2012 - number of Oli 45 b, Oli 45c, Oli b, Oli c and Parabolic for the year 2013 The PP is requested to clarify the disparity in these values	MR	Sales figures may change also for past years since the salesforce database is continuously updated and also revised based on findings during verification or from financial audits. Some stove sales are reported late and thus are included at a later stage in the salesforce database (sometimes it takes more time to get figures from the field). The latest value in sales record is the most updated one also for past years. In case the number is lower in the MR 2014 as compared to MR 2013, the reason is that stove sales have been removed from the database due to findings during financial audit or regular checks. In case more stoves are reported for the period 2013 in MR 2014 as compared to MR 2013, the reason is that sales data for some sales made in 2013 had not yet been reported for the MP 2013 and were only included in the	The PP's clarification has been reviewed and is acceptable. CL:1 is closed

VERIFICATION REPORT

Draft report clarifications and corrective action requests by verification team								Ref. to checklist question in table 1	Summary of project participant response	Verification team conclusion																								
									sales database after closure of the monitoring period. Please see revised project database and MR for latest sales figures retrieved from the salesforce database in May 2015.																									
CL: 2 a) For the stove sales made in 2014, a comparison of the numbers reported in the monitoring report on pg 7 and the financial audit report, shows a difference in the number of stoves reports as follows: <table><tr><td>Type</td><td>Box</td><td>OLI - 45b</td><td>OLI-45c</td><td>OLI - 60b</td><td>OLI-b</td><td>OLI-c</td><td>Parabolic</td></tr><tr><td>Monitoring report</td><td>621</td><td>113</td><td>831</td><td>63</td><td>3847</td><td>18967</td><td>99</td></tr><tr><td>Financial report</td><td>616</td><td>116</td><td>832</td><td>57</td><td>4056</td><td>19763</td><td>100</td></tr></table> b) During on site assessment, it was noted that the number of stoves counted for emission reductions as generated by sales force on site is different from the number reported in the monitoring report for the same period, as follows:								Type	Box	OLI - 45b	OLI-45c	OLI - 60b	OLI-b	OLI-c	Parabolic	Monitoring report	621	113	831	63	3847	18967	99	Financial report	616	116	832	57	4056	19763	100	MR	a) The accounting of stove sales from retailers is sometimes a bit delayed compared to the reporting of classical direct sales done by ADES. This may cause discrepancies between salesforce and financial reporting. However, it is important to note that the number of stoves counted for ER is always lower than the stoves sold as per financial audit report. It is thus reasonable to assume that sales figures as per salesforce are conservative. b) Since the salesforce database is continuously updated and revised in case of errors, the data checked during on-site visit by the DOE may be different from the data retrieved from the salesforce at the time, when	The PP's clarification has been reviewed and is acceptable. CL:2 is closed
								Type	Box	OLI - 45b	OLI-45c	OLI - 60b	OLI-b	OLI-c	Parabolic																			
								Monitoring report	621	113	831	63	3847	18967	99																			
								Financial report	616	116	832	57	4056	19763	100																			

VERIFICATION REPORT



Draft report clarifications and corrective action requests by verification team						Ref. to checklist question in table 1	Summary of project participant response	Verification team conclusion
Type	Box	OLI-45c	OLI-b	OLI-c	Parabolic		monitoring report was compiled. The latest data from salesforce (May 2015) has been used for ER calculation and the MR has been updated accordingly. The number of total stoves counted is lower than earlier reported. This shows that the revisions are conservative.	
Monitoring report	594	676	3584	17255	86			
On-sites sales force report	593	672	3600	17242	87			
It was also noted that the total number of stoves not counted was 5514 against 5508 in the monitoring report. The PP is requested to clarify the disparities in the numbers being reported and claiming emissions.								
CL: 3 In the project database, a spreadsheet is provided (ref stove_years_2014) showing a summary of the stove years for 2014. The PP is requested to provide data from which the summary is extracted.						MR	As referenced below the table in the work sheet stove_years_2014, the data source is the salesforce, which was presented to the auditors during on-site visit. A print screen has been included in the excel file to show the original table generated in salesforce.	The PP's clarification has been reviewed and is acceptable. CL:3 is closed

Annex 1: Site visit report

ADES Solar and efficient stoves in Madagascar – GS 464
Site visit report

1. Objective

To assess actual implementation of the project activity, cross check information used to calculate emissions reduction and interact with project stakeholders and assess to issues raised in previous verification.

2. Site visit activities

Activity	Participants
1. Interview with ADES staff	Management team and Verifier
2. Assessment of records (staff employment, sales record, survey and KT records)	Verifier and guides
3. Interviews with stove users	Users, Verifier and guides
4. Interviews with School representatives	School representative, Verifier and guides

3. Assessment method

The verifier employed three methods namely review of records, interviews and observations, to gather necessary information.

4. Results and conclusions**4.1 Review of record**

The assessment of records was based on random sampling. The verifier employed acceptance sampling as described in CDM “Sampling and surveys for CDM project activities and programme of activities” version 04.1. A minimum sample size of 8, at an acceptance number of 0, was selected for each of the following: Usage Survey records, Aging Kitchen Test records and Kitchen Survey records. The assessment involved reviewing the records (filled in questionnaires) and assessing entry of the information in the questionnaires into the analysis sheets. From the assessment no discrepancies were observed in the samples selected.

The verifier also reviewed a sample of employment records for ADES staff in Fianarantsoa and Tulea, to establish the employment status and verify the numbers reported in the monitoring report. This was coupled with interviews. From the assessment, the verifier was informed that ADES staff received more benefits than an average worker in the project boundary. Benefits included paid medical expenses, a 13 month year wage and school fees for ADES’ staff children.



The Financial audit report was reviewed to confirm the numbers being reported in the monitoring report. This was further crosschecked with sales reports from ADES Salesforce Database. Discrepancies were observed between the numbers reported and a clarification request was issued.

Other records reviewed include Calibration records for weighing scale

4.2 Interview with ADES staff

The verifier carried out interviews with ADES staff in Fianarantsoa and Tulea. The interview topics included nature of employment at ADES, role of each staff in the implementation and monitoring of the project, and challenges faced in the implementation of the project. All the staff indicated they were happy to work at ADES and support efforts to protect the environment. The animators indicated that all the people who have purchased the stoves are satisfied with the quality of the stove and that some of them bought extra stoves for their relatives or neighbours.

4.3 Interview with stove users

During this verification 17 stove users were interviewed out of which 9 were visited and 8 were interviewed by phone. With the exception of 2 stove users, the rest were sampled from users who participated in the usage survey and the aging kitchen test. The following topics were discussed:

- Participation in the Usage survey/ Aging kitchen test
- Number of people cook for and number of meals per day
- Quality of the stove
- Benefits from the stove

Participation in the Usage survey/ Aging kitchen test

All the stove users sampled from users who participated in the usage survey and the aging kitchen test confirmed their participation in the usage survey and aging kitchen test respectively.

Number of people cooked for and number of meals per day

From the interviews it was found that most of the users prepare meal three times a day. Out of the 17 users interviewed, 14 indicated they prepare 3 meals a day, 1 prepared 2 meals a day, 1 prepared 1 meal a day, while the remaining one did not respond. The number of people cooked for varied from 3 people to as many as 20 people.

Quality of the stove

The 9 stove users visited were from the Oli-b cluster of stoves and they had been using their stoves for more than 3 years. From interviews with the 9 users, 7 of the users indicated that their stoves had been repaired and they were using them continuously, while 2 users indicated that their stoves had not been repaired and they used their stoves in the rainy season. For the 2 stoves that had not been repaired, it was



observed that the kettles (that is the outer container of the stoves) were worn out. Interview with ADES management indicated that, ADES only offers a 3 year warrantee for the stoves purchased. From the verifier's observation and interview with the users, the verifier concludes that the quality of stoves older than 3 years cannot be guaranteed. However usage of such stoves is determined through usage survey. The other 8 users interviewed by phone were from the solar stove cluster and their stoves were older than 5 years. All of them indicated that they are using their stoves and none of them indicated that their stove had been repaired. The verifier was also provided with photos (with GPS coordinates) of an additional 8 solar stove older than 5 years and they all show that the stoves were in good condition. ADES offers a 5 year warrantee for the solar stoves. The verifier concludes that the solar stoves quality is good even after five years. The images below show the condition of a repaired and non repaired stove as observed during the visit.



Oli-b stove (>3 years old) repaired



Oli-b stove (>3 years old) not repaired



Solar box (>5 years old)

Benefits from the stove

From the interview, the key benefit standing out from all the users is the savings in fuel used. All indicated that they were using less fuel since they purchased the stoves.

4.5 Interview with school representatives

Two schools were visited. Representatives of the two schools visited confirmed ADES visits to their schools. For one of the schools, the representative indicated that ADES had visited six times, carried training on how to cook with solar stove. The children in the school were taught about trees, use of the solar box, environment protection and were taken for a tour to a local arboretum. Representatives of the two schools expressed their appreciation of ADES visits indicating that it complemented learning in their institutions.