



Voluntary Carbon Standard Version 2007 Verification Report Template

19 November 2007

Verification Report:

Name of Verification company:	Date of the issue:
Bureau Veritas Certification Holding SAS	01.07.2010
Report Title:	Approved by:
Fuel-Wood Saving with Improved Cook stoves in Cambodia Version : 01	Eduardo Galvão
Client:	Project Title:
GERES (Groupe Energies Renouvelables et Environnement)	Fuel-Wood Saving with Improved Cook stoves in Cambodia
Summary:	
Bureau Veritas Certification has made the verification of the Fuel-Wood Saving with Improved Cook stoves in Cambodia Project. The verification scope is defined as a periodic independent and objective review and an ex-post determination of the monitored reductions in GHG emissions during defined verification period and consisted of the following three phases: i) desk review of the project design, 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. The first output of the verification process is a list of Clarification and Corrective Actions Requests (CL and CAR), presented in the Verification Report. Taking into account this output, the project proponent revised its Monitoring Report Document and other related document. In summary, it is Bureau Veritas Certification's opinion that the project correctly applies the baseline and monitoring methodology :Improved Efficiency in Use of Non-Renewable Biomass Reference: Climate Care Trust, derived from proposed methodology SSC.II.G., amended by the Joanneum Institute and approved by the community of practice (HEDON, Stove and Carbon Special Interest Group) and meets the relevant VCS requirements and local legislation. Based on the information we have seen and evaluated, we confirm the following statement: Reporting period: 01/01/2009 to 31/12/2009 Emission reductions: 268,573 tCO₂e	
Work carried out by:	Number of pages:
Kusheru Wibowo- Team Leader Nattapat Teeranantaniid -Team member Pongsakorn Sa-ngapon-Team member	35

Table of Contents:

1 Introduction	3
1.1 Objective	3
1.2 Scope and Criteria	3
1.3 VCS project Description	4
1.4 Level of assurance	4
2 Methodology	4
3 Verification Findings	9
3.1 Remaining issues, including any material discrepancy from previous validation	10
3.2 Project Implementation	13
3.3 Completeness of Monitoring	13
3.4 Accuracy of Emission Reduction Calculations	13
3.5 Quality of Evidence to Determine Emission Reductions	15
3.6 Management and Operational System	15
4 Verification conclusion	15
5 References	17
6. Appendix	18
Appendix 1 – Verification Protocol	18
Appendix 2 – Competence of the Verification Team	35

1. Introduction

GERES (Groupe Energies Renouvelables et Environnement) has commissioned Bureau Veritas Certification to verify the emission reductions of its VCS “Fuel-Wood Saving with Improved Cook stoves in Cambodia Project”/2/.

This report summarizes the findings of the fourth periodic verification of the project, performed on the basis of VCS – Voluntary Carbon Standard version 2007.1/6/ criteria, as well as criteria given to provide for consistent project operations, monitoring and reporting.

1.1 Objective

Verification is the periodic independent review and ex post determination of the monitored reductions in GHG emissions during defined verification period. The objective of the periodic verification is to verify that actual monitoring systems and procedures are in compliance with the monitoring systems and procedures described in the monitoring plan; further more, the periodic verification evaluates the GHG emission reductions data and express a conclusion with a high, but not absolute, level of assurance about whether the reported GHG emission data is free of material misstatements; and verifies that the reported GHG emission reductions data is sufficiently supported by evidences, i.e. monitoring records. The verification shall consider both quantitative and qualitative information on emission reductions. Quantitative data comprises the monitoring reports submitted to the verifier by the project entity. Qualitative data comprises information on internal management controls, calculation procedures and procedures for transfer, frequency of emissions reports, review and internal audit of calculations/data transfers. The verification is based on criteria set by VCS – Voluntary Carbon Standard version 2007.1.

1.2 Scope and Criteria

The verification scope is defined as an independent and objective review of the project design document, the project’s baseline study and monitoring plan and other relevant documents. The information in these documents is reviewed against VCS – Voluntary Carbon Standard version 2007.1/6/ The verification is not meant to provide any consulting towards the Client.

However, stated requests for forward actions and/or corrective actions may provide input for improvement of the project monitoring towards reductions in the GHG emissions.

According to the VCS, the verification also includes an independent third party assessment of the project design. In particular, the project baseline, monitoring plan and the project compliance with relevant applicable criteria of the GHG programme recognized by the VCS (e.g UNFCCC CDM baseline and monitoring methodologies) are to be validated in order to confirm that the project design, as documented, is sound and reasonable and meets the applicable criteria. While the verification of the emission reductions reported for the period 1 January to 31 December 2009 were carried out in accordance with the VCS 2007.1, the validation of the project, in particular the assessment of the baseline and monitoring methodology applied by the

project and the evaluation of the project's eligibility for the VCS, was performed according version 1 of the VCS. The validation was performed in connection to the four verification period. The project validated under version 1 of VCS can thus be grandfathered into VCS 2007.

1.3 VCS project Description

Title of project activity: Fuel Wood Saving with Improved Cook-Stoves in Cambodia
Project Participants: Project developer: GERES Cambodia
Project partner: WENETCAM (Wood Energy Network of Cambodia) and DATe (Development and Appropriate Technology)
Location of the project activity: The project is located at 9 regions/states/provinces: Phnom Penh, Kandal, Kompong Speu, Prey Veng, Takeo, Siem Reap, Battambang, Kampong Cham and Kompong Chhnang, Cambodia

The project was initiated as part of the Cambodian Fuel-wood Saving Project (CFSP), which was created to reduce the wood consumption in Cambodia in order to protect its forest resources. There are two phases of the project.

Phase I of the project began in 1997 and ended in 2001. This phase was primarily a set up phase which elaborated stove design, trained producers and developed a distribution network for the New Lao Stove (NLS).

Phase II of the project started in 2002 and was completed in January 2007. Phase II focused on developing the commercialized distribution of the stove design.

The ultimate goal of the project is to facilitate a nationwide shift from inefficient exploitation of fuel wood to sustainable and efficient biomass use.

Apart from avoiding GHG emissions by reduced wood and charcoal combustion, the project also contributes to improvements in a number of areas: Avoidance of overexploitation of the forests reduction of airborne particles emission and associated respiratory diseases; time saving in firewood collection, reduction of purchased fuel costs, and transfer of technology to indigenous people and creation of employment opportunities.

1.4 Level of assurance

The level of assurance of the verification report is defined as high.

2. Methodology

Findings established during the verification may be that:

- i) The verification is not able to obtain sufficient evidence for the reported emission reductions or part of the reported emission reductions. In this case these emission reductions shall not be verified and certified;
- ii) The verification has identified material misstatements in the reported emission reductions. Emission reductions with material misstatements shall be discounted based on the verifier's *ex-post* determination of the achieved emission reductions.

A corrective action requests (CAR) may be issued, where:

- i) Non-conformities with the monitoring plan or methodology are found in monitoring and reporting, or if the evidence provided to prove conformity is insufficient;
- ii) Mistakes have been made in applying assumptions, data or calculations of emission reductions which will impair the estimate of emission reductions;
- iii) Issues identified in a FAR during validation to be verified during verification have not been resolved by the project participants

A clarification request (CL) may be issued, where:

information is insufficient or not clear enough to determine whether the applicable VCS requirements have been met.

A forward action requests (FAR) may be issued, where:

The monitoring and reporting require attention and/or adjustment for the next verification period.

The overall verification, from Contract Review to Verification Report & Opinion, was conducted using Bureau Veritas Certification internal procedures. The Verification Report shows, in a transparent manner, criteria (requirements), means of verification and the results from validating the identified criteria.

The methodologies used are:

- Voluntary Emission Reductions methodology: "Improved efficiency in use of non-renewable biomass" July 2006, Climate Care Trust./7/

Duration of verification

Preparations:	March 29-30, 2010
On-site verification:	March 31-April 2, 2010
Verification of subsequent records:	January 1 st December 31 st 2009
Draft report:	April 9, 2010
Final Report:	June 1, 2010

2.1 Review of project documentation

The basis for the verification has been the monitoring report from the project for the period January 1 – December 31 , 2009, dated February 20 , 2010, version 3/1/ and monitoring records for the same period; version 6 of VCS-PD dated April 25, 2007 /2/ and the applied methodology for the project, Voluntary Emissions Reductions: "Improved Efficiency in Use of Non-Renewable Biomass", July 2006 /7/. The project operator has in addition supplied the verification team with instructions from its management system as well as detailed raw data needed for verification of the required emission factors used for the verification period. The main changes during the 3rd - 4th verification are as follows:

FAR 1: VCS-PD was revised on 7/7/09 for clarifying of stove size which do not impact negatively to GHG emission reduction or removals after validation therefore the project participant should to officially notify and obtain the confirmation from VCS on the PD revision prior to the verification of the next crediting period

The project proponent contacted to VCS representatives, Jerry Seager (VCS program manager) and Bret Bonner (VCS program officer) and received an email correspondence on 27th November 2009 (page 6-7 in Monitoring report 1st Jan-31st December 2009) and GERES was advised not to make the changes if they are non-substantive therefore the revised version of VCS-PD was discarded and the original version (version 6, 25/4/07) remains valid. The FAR is closed.

FAR 2: Monitoring staff found Producer Yem Koeum's problems (Dimension of lower pot rim and Dimension of base of combustion chamber did not pass standard) continue 2 months (Jan and Feb 2009). However , they don't have any evidences to find root causes, collective, preventive action and follow up these problems. Corrective action system should be established such as in case dimension monitoring results are defect in many times or recurred, further problem analysis and action plan should be defined and follow up for the effectiveness.

The project proponent responded by Issued the Quality Control Procedure. The Quality Control Procedure sets the shrinkage factor to control the dimension of final product which recorded by QC team very 90 days. Corrective action processes to be implemented if score below 60 points. therefore The FAR is closed.

2.2 Site Visit

Detailed verification of all operational data leading up to the date of the site audit was performed during a visit at GERES Cambodia on 31 March to 2 April 2010. During the site visit, the following personnel were interviewed or assisted the verification team:

Name	Position of GERES Cambodia
Mr. Iwan BASKORO	Country Director
Mr. HOEUNG Chuntheng	QC & Monitoring Unit Manager
Ms. Kimberley BUSS	CDM Analyst
Mr Eric BUYSMAN	CDM Analyst
Mr. SANN Saly	Monitoring Staff

These people were also present at the opening and closing meeting of the audit.

2.2.1 Audit Program

The site visit had the following program:

March 31 , 2010

Team 1

Time	Activities
07:00-12:00	Opening meeting &Introductory meeting Site visit Stove producers in Prey Veng (MSPV)
13:00-17:30	Site visit Stove producers in Kampong Cham
17:30-18.00	Conclusion Meeting Day I

Team 2

Time	Activities
07:00-12.00	Opening meeting &Introductory meeting Site visit Stove producers in KampongChhnang(KCK,SAKC,KTKC,SKC,SSKC)
13:00-18:00	Site visit Stove producers in Kampong Chhnang (RRCK,SVKC,MMKC,SMKC)
17:30-18.00	Conclusion Meeting Day I

Team 3

Time 3	Activities
07:00-12.00	Opening meeting &Introductory meeting Site visit Stove producers in Battambang (KBTB)
13:00-18:00	Site visit Stove producers in Battambang (PBTB)
17:30-18.00	Conclusion Meeting Day I

April 1 , 2010

Team 1

Time	Activities
07:00-12.00	Site visit Distributor and endusers in Phom Penh
13:00-18:00	Site visit Distributors and endusers in Phom Penh
17:30-18.00	Conclusion Meeting Day 2

Team 2

Time	Activities
07:00-12.00	Site visit Stove producers in Kampong Chhnang (TCD,KPKC)
13:00-18:00	Site visit Stove producers in Kampong Chhnang (MSPV)
17:30-18.00	Conclusion Meeting Day 2

Team 3

Time	Activities
07:00-12.00	Site visit Stove producers in Battambang
13:00-18:00	Site visit Distributors and endusers in Phom Penh
17:30-18.00	Conclusion Meeting Day 2

April 2, 2010**Team 1,2,3****Time Activities**

08:00 -12:00 Reviewing document data in GERES office in Phnom Penh

13:00-14:00 Reviewing document data in GERES office in Phnom Penh 14:00-15:00
Further Data checking15:00-16.00 **Conclusion Meeting**

The site visit program selected 17 main producers from total 30 producers because geography barrier and logistic problems, producer sites scatter across area in Cambodia and difficultly access to all producer sites located in frontier area. However, 17 mian producers are 90.6 % of total stoves produced in 2009 representatives In addition, stove technology is not complicated therefore wherever is same technology. Finally to ensure that all producers still produce stoves, verification team verifies production and sale records (Logbook) of all producers in GERES office and checked unit of stoves sold by producers compared with unit of stoves sold in emission calculation sheet .

2.2.3 Review of monitoring results and verification of the correct application of monitoring methodologies

Parameter	Monitoring
Quantity of Stoves sold (Unit)	This data is collected by the monitoring staff and in turn keyed into the spreadsheet for calculation.
Traditional Fuel Consumption (Kg)	This data refer from In 2007 a national user survey was conducted to analyze the fuel mix used in traditional stoves
Wood to charcoal ration (Kg/Kg)	This data uses IPCC default value for wood to charcoal conversion
Fuel Saving (%)	Household Cooking Test results demonstrate fuel savings of using a New Lao Stove by monitor mass of biomass used before and after installation of the efficiency devices
Equipment Ratio	Equipment ratio refers to the number of stoves used per family which collected from the national user survey in 2007
Stove Shelf life (Day)	The period between the production and the usage of the NLS is determined, the Point of Sale Time (POST). This data Using the figures of the QC labels .
Stove lifetime (Month)	Data collected during the national user survey showed that of stoves users who were no longer using their first stoves
NCV biomass (MJ/Kg)	This data uses Net Calorific Value (NCV) stipulated in the IPCC guidelines 2006.

EF Biomass (tCO ₂ /TJ)	This data uses Emissions Factors stipulated in the IPCC guidelines 2006
-----------------------------------	---

2.2.4 Determination of the reductions in GHG emissions

Parameter	Reported Value	Verified Value
Quantity of Stoves sold (Unit)	297,153	298,013
Traditional Fuel Consumption (Kg/month)	Wood 37.56 Charcoal 32.12	Wood 37.56 Charcoal 32.12
Wood to charcoal ration (Kg/Kg)	6	6
Fuel Saving (%)	Wood 20.89 Charcoal 21.2	Wood 20.89 Charcoal 21.2
Equipment Ratio	1.6	1.6
Stove Shelf life (Day)	53.4	53.4
Stove lifetime (Year)	2.5	2.5
NCV biomass (MJ/Kg)	15.6	15.6
EF Biomass (tCO ₂ /TJ)	112	112

2.2.5 Review of additional data from other sources if appropriate.

Additional data use

Net calorific value (NCV) of biomass, wood fuel : 15.615.6 MJ/Kg from Intergovernmental Panel Climate Change (IPCC)

Emission factor of Biomass: 112 tCO₂/TJ from Intergovernmental Panel Climate Change (IPCC)

Wood to charcoal ration: 6 kg wood / kg charcoal from Intergovernmental Panel Climate Change (IPCC)

3. Verification Findings

In the following sections, the findings of the verification are stated. The verification findings for each verification subject are presented as follows.

3.1 Remaining issues, including any material discrepancy from previous verification

This is the Fourth Periodic Verification of the project.

The data presented in the monitoring report and monitoring and operational records for the entire verification period were assessed in detail by review of the detailed project documentation and production records, interviews with personnel of GERES Cambodia, relevant NLS producers, retailers and end users, collection of measurements, observation of established monitoring and reporting practices and assessment of the reliability of monitoring system. This has enabled the verification team to assess the accuracy and completeness of reported monitoring results and verify the correct application of the monitoring methodology.

Following the site visit and submission of additional information, monitoring and operational records for the entire verification period were assessed for the period 1 January– December 2009. Reconsolidation of all reported data was performed, based on a final assessment of monitoring and operational records from the period subsequent to the audit.

The previous verification raised Forward Action Requests and closing details as below

- VCS-PD was revised on 7/7/09 for clarifying of stove size which do not impact negatively to GHG emission reduction or removals after validation therefore the project participant should to officially notify and obtain the confirmation from VCS on the PD revision prior to the verification of the next crediting period

Response from a project proponent: received the correspondence from VCS representatives, Jerry Seager (VCS program manager) and Bret Bonner (VCS program officer on 27th November 2009. Geres was advised not to make the changes of VCS-PD if they are non-substantive therefore GERES still used the original version of VCS-PD (version 6)

- Monitoring staff found Producer Yem Koeum's problems (Dimension of lower pot rim and Dimension of base of combustion chamber did not pass standard) continue 2 months (Jan and Feb 2009). However , they don't have any evidences to find root causes, collective, preventive action and follow up these problems. Corrective action system should be established such as in case dimension monitoring results are defect in many times or recurred, further problem analysis and action plan should be defined and follow up for the effectiveness.

Response from a project proponent: Issued the Quality Control Procedure to control the quality of stove also setted the corrective action processes to be implemented if the quality of stove are failure.

3.1.1 Factors used for project emission reduction calculations

All reported factors required by monitoring methodology of “Improved Efficiency in Use of Non-Renewable Biomass”, July 2006,/7/ the parameters required for monitoring given in the VCS-PD as well as necessary management system issues were also assessed during the site visit. This included the following:

Ex-ante parameters:

- a. Fuel saving test (laboratory and actual testing);
- b. Wood to charcoal conversion;
- c. NCV of biomass;
- d. EFCO₂, biomass;

Ex-post parameters:

- a. Sales of New Lao Stoves to distributors;
- b. Stoves produced by respective producers;
- c. Stove lifespan
- d. Equipment ratio per family.

3.1.2 Monitored data for project emissions within the project boundary

The following data reported in the monitoring report from the project has been assessed in detail. When nothing else is stated, the numbers reported are found to be correctly reported.

3.1.2 .1. Quantity of New Lao Stoves sold

This amount is reported on a routine basis when complete NLS is produced. The specification is 7 types of NLS (A00, A0, A1, A2, A3, A4 and A5). The total quantity of each stove type (7 types) produced is summed-up on a monthly basis. This data is collected by the monitoring staff and in turn keyed into the spreadsheet for calculation.

Found number of stoves sold from producers' record raw data (Log books) during year 2009 are different from units of stoves sold in Emission reduction calculation in Monitoring report (1 January - 31 December 2009) such as Meng Chhun raw's data annual sold stoves 2,242 units but in Emission reduction calculation used 2,332 units ,Dul Sam Oun's data annual sold stoves 19,393 units but Emission reduction calculation used 19,649 units and others. (CAR 1)

However, project owner responded by details below

The stove sales data in the producer logbooks were checked against the electronic database that forms the basis of the GERES' stove sales estimates and emissions reductions calculations.

The data was checked by Ms KUY Putheary (Climate Change Unit Executive Assistant) and Mr NEANG Vanna (Monitoring Staff, Quality Control and Monitoring Unit). It was verified by Ms Kimberley BUSS (CDM Analyst, Climate Change Unit).

The revised stove sales data for each producer are outlined in Monitoring Report /1/

The revised emissions reductions are in the updated Monitoring Report and the updated emissions reduction calculation spreadsheet /3/ (CAR 1 is closed)

3.1.2 .2. Quantity of New Loa Stove replaced (NLS lifespan)

As part of the National User Survey (2009), the project has selected a 2.5 years as replacement of a NLS based on the disposal rate. It is conservative that the calculation of VERs is based on the latest survey of 2.5 years same as the previous verification. It is conservative that the calculation of VERs is based on the latest survey of 2.5 years.

Regarding to National Cookstove User Survey (2009) need to be more clarified and provide more information as following (CL 3)

- (1) Please provide more explanation about the household sample size selection that refer in page 5 paragraph 3 as selected by use confidence level of 98%, 2,484 households were taken from 399,954 total households. However, according to a report published by the Ministry of Planning in 2009, 33.7 percent of the population in Cambodia is between 0-14 years old. Respectively, the survey will not interview respondents in this particular age; therefore 1,671 sampled households were selected for the study.
- (2) Please provide more explanation about the frequency of user survey in 2009 including month and date of each user survey activities.
- (3) Please provide more additional results in year 2009 in term of Determine life time of cookstove.

As CL3 response, The issue of stove lifetime will be resolved in 2011, because date stamping of stoves commenced in January 2009 and, by mid-2011, will provide evidence that the stoves last for at least 2.5 years. However the project owner already being conservative in 2.5 year estimate – initially, based on a GERES study that assumed the stove lifetime to be 3 years.

3.1.2.3 Quantity of stoves in use:

The second verification a project owner used the figures of the QC labels and analyses the available data and conclude that Point of Sale Time (POST) is 53.4 days. In the interest of maintaining a conservative estimate a period of 53.4 days is adopted for the fourth verification period.

3.1.2.4 Quality of New Loa Stoves sold

From Quality control manual and Monitoring Report: Fuel Wood Saving with Improved Cook stoves in Cambodia, version 3: 1 January – 31 December 2009 dated February 20, 2010 /1/ found all activities have been implemented and comply with Monitoring report and QC manual.

3.2 Project Implementation

The project is implemented and has been in operation since May 10, 2003, when the commercial manufacturing, distribution and sales of NLS commenced. The project started the management and monitoring of quantity produced by the producers and the quantity of NLS sold to the distributors as input to a Voluntary Carbon Standard project since May 10, 2003. All project activities have been implemented as per the VCS-PD version 06 date 25 April 2007. However, there are some questions such as How to ensure that all stoves which use to be calculated for emission reduction are made from producers who have production and quality control process knowledge ? (found many producers do not pass stove production and QC training such as Producer ID SAKC, MMKC, PMKC, PHCK(CL 2). Finally, project owner clarified that Producers who have not been formally trained by GERES/ DATE must be passed the 5-step QC process that allows inclusion in the NLS project. Refer to 5-stage QCM procedure for new producers (CL 2 is closed)

3.3 Completeness of Monitoring

The monitoring of the project is comprehensive and in accordance with the approved monitoring methodology. The monitoring methodologies and sustaining records have a question such as Which documents, records and computer files related to VCS project should be kept ? How long to keep them, Where are they kept ? and Who responsible for control them ?(CL 1) Finally , project owner added controlled details of document record and computer files related to VCS project in the NLS QCM Procedures Manual (CL 1 is closed)

Majority of the factors used are either adopted from IPCC or project specific data. All the parameters needed for emission reduction calculations were sufficiently monitored except that the Project Proponent needs to review the sustainability of the data collection system. However, during the fourth verification It was found that Retailer stove name “ Leng Chuo” located in the Kampong Cham, the monitoring activity of labelling stove number was not accordance with monitoring plan, Retailer has not recorded the numbering label sold, but the recorded base on serial number they have prepared, this activity will potential influence for deciding life time of stove.(FAR 1)

Project owner already established and documented procedure for controlling seller in order follow standard operation and invited seller to attend refresh training to ensure that they will follow the standard operation. (FAR 1 is closed)

3.4 Accuracy of Emission Reduction Calculations

The formula used for the emission reduction calculations was found to be accurate. The following assumptions were made/implied in the calculations, and they have been substantiated with evidence from the project proponent to confirm that the assumptions made in the calculations are fair and conservative.

The following parameters (*ex-ante*) have been reviewed and revised to ensure conservativeness of assumptions:

a. Quantity of NLS sold

Emission reductions from this project activity are calculated through monitoring the monthly

sales of stoves sold by producers. However, the NLS purchased by distributors are not necessarily immediately being sold to end users. It can be assumed that once the stoves reach the end users; they are utilized and emission reductions can accrue. However, emissions reductions will not accrue during the time that stoves take to reach the end user. Two points in the supply chain can affect the length of this period. Firstly, during distribution from producers to retailers, sometimes via middlemen. Secondly, the number of stove shelf days (SSD), the length of time stoves are held by the retailer before their eventual sale to the end user. To estimate the total time lapse between the moment of stove production and the point of sale Geres introduced a NLS labeling system. These labels serve as quality control but also contain a unique number. By recording the moment of which the labels are obtained by the producers and by recording the moment the stove is sold to the user, the period between the production and the usage of the NLS is determined, the Point of Sale Time (POST).

During the fourth verification period the Point of Sales Time (POST), the time between stoves being sold by the producer and utilized by end users, was used 53.4 days.

b. Fuel saving test (laboratory and actual testing)

The test was carried out both in the laboratory and in the field. The laboratory test involved the "water boiling test" in laboratory utilizing both the traditional and new Laos stoves to verify the efficiency gained in the NLS that defined in The monitoring activity report Jan 10th-31 Dec 2008./4/

c. Wood to charcoal conversion

Wood to charcoal conversion will be maintained by using the IPCC default value of 6 kg of wood per kg of charcoal.

d. NCV biomass and EFCO₂, biomass

The earlier calculation has utilized default values of IPCC 2006, i.e. NCV biomass and EFCO₂, biomass. The values has been maintained and used in its emission reduction calculations and relevant spreadsheets have been reviewed and deemed satisfactory.

Ex-post parameters:

a. Sales of New Lao Stoves to distributors

The average POST is 53.4 days, which is same assumed previously. In the interest of maintaining a conservative estimate a period of 53.4 days is maintained for the fourth verification period.

b. Stoves produced by respective producers

The quantity of stoves produced by each producer is monitored to check on the overall movement of NLS in the market.

c. Stove lifespan

According to the national user survey 2009 it is shown that the average disposable rate of the NLS is 29 months. Therefore the project has selected a 2.5 years as replacement of a NLS based on the disposal rate. It is conservative that the calculation of VERs is based on the latest survey of 2.5 years.

d. The assumption of equipment ratio per family in version 6 of VCS-PD was 1.6 which based on the recent survey.

3.5 Quality of Evidence to Determine Emission Reductions

All necessary documentation is collected, referenced and aggregated and is easily accessible in hard-copy or electronic format. However, there is no procedure to control all necessary documentation (CL 1) finally CL 1 is closed . No measuring equipment was involved. Key data can also be cross-checked via other sources, such as stoves produced, sales and inventory data. Some assumptions made have to be further justified to ensure conservative estimation or calculation of carbon emission reductions.

3.6 Management and Operational System

The project owner has applied some management system to the fire wood and charcoal saving project. Relevant monitoring and measurement procedures have been documented and relevant employees have been trained to ensure stipulated procedures are adhered to. The quality assurance of data management has been improved with sufficient checking after each entry on a monthly basis and approved data will be password protected to prevent any unintended edition.

4. Verification conclusion

Bureau Veritas Certification has made the fourth periodic verification of the VCS Fuel-Wood Saving with Improved Cook stoves in Cambodia, GERES (Groupe Energies Renouvelables et Environnement) The verification was performed on the basis of VCS 2007.1 criteria, Monitoring Methodology is Improved Efficiency in Use of Non-Renewable Biomass Reference: Climate Care Trust, derived from proposed methodology SSC.II.G., amended by the Joanneum Institute and approved by the community of practice (HEDON, Stove and Carbon Special Interest Group), host country criteria and also on the criteria given to provide for consistent project operations, monitoring and reporting. The management of GERES (Groupe Energies Renouvelables et Environnement) is responsible for the preparation of the GHG emission reductions data and the reported GHG emission reductions of the project, on the basis set out within the project Monitoring and Verification Plan, indicated in the final VCS-PD version 6, 25 April 2007. 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. Appropriate procedures for maintaining the confidentiality and safe custody of the validation or verification documentation and for retaining them for a period sufficient to meet the need of the clients, the responsible parties, the GHG programmes to which they subscribe, and in accordance with legal and professional requirements of record retention have been established.

Bureau Veritas Certification verified the VCS Monitoring Report version 4 dated on 22/04/2010 for the reporting period as indicated below. Bureau Veritas Certification confirms that the project is implemented as planned and described in the VCS-PD. Installed equipment being essential for generating emission reduction runs reliably and is calibrated appropriately. The monitoring system is in place and the project is generating GHG emission reductions (VCUs).

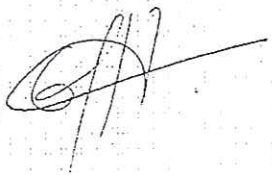
Bureau Veritas Certification can confirm that the GHG emission reductions are calculated without material misstatements. Our opinion relates to the project's GHG emissions and resulting GHG emission reductions, reported and related to the valid and registered project baseline and monitoring and its associated documents. Based on the information we have seen and evaluated, we confirm the following statement:

Reporting period: From 01/01/2009 to 31/12/2009.

Verification emission in the above reporting period:

Baseline Emissions: 315,984 tCO₂e
Project Emissions: 12.74 tCO₂e
Leakage: 47,398.26 tCO₂e
Emission Reductions : 268,573 tCO₂e (VCUs)

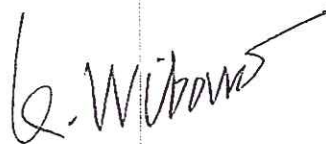
June 1, 2010



Eduardo Galvão
Internal Technical Reviewer



Nattapat Teeranantani
Team member



Kusheru Wibowo
Team Leader & Lead verifier



Pongsakorn Sa-ngapon
Team member

REFERENCES

Documents provided by the project participants that relate directly to the project:

- /1/ Monitoring Report: Fuel Wood Saving with Improved Cook stoves in Cambodia, version 3: 1 January- 31 December 2009 dated April 22, 2010
- /2/ VCS Project Description (VCS-PD): Fuel Wood Saving with Improved Cook stoves in Cambodia, version 6.0 of 25 April 2007.
- /3/ Additional data: Project Spreadsheet (NLS database January 1st -December 31st 2009. V8.xls), Producers' production and sales data, transport emissions spreadsheet and monitoring activities report.
- /4/ Monitoring Activities for Verification of GERES-Cambodia's New Lao Stove Project. Jan 10th 2008 – Dec 31st 2008

Background documents related to the design and/or methodologies employed in the design or other reference documents:

- /5/ Voluntary Carbon Standard, version 1, March 2006.
- /6/ Voluntary Carbon Standard, 2007.1, 18 November 2008.
- /7/ Voluntary Emission Reductions methodology: "Improved efficiency in use of non renewable biomass" July 2006, Climate Care Trust.
<http://cdm.unfccc.int/UserManagement/FileStorage/RX9G3AESH7GO0QVR07CI0DV0AJ02VY>
- /8/ Production and Sales Reports Log books (daily), 10 January 2008 -31 December 2008.
- /9/ International Emission Trading Association (IETA) & the World Bank's Prototype Carbon Fund (PCF): *Validation and Verification Manual*. <http://www.vvmanual.info>.
- /10/ Monitoring Report: Fuel Wood Saving with Improved Cook stoves in Cambodia, version 1& 8: 10 January 2007 – 9 January 2008 dated January 8, 2008 and September 16, 2008
- /11/ Verification and Certification report , Fuel wood saving with improved cookstoves in Cambodia , May 10, 2003 -January 9,2007 , Det Norske Veritas, report No.2007-1017 revision no.00
- /12/ Verification and Certification report , Fuel wood saving with improved cookstoves in Cambodia , January 10,2007-January 9,2008, Det Norske Veritas, report No.2008-1011 revision no.01
- /13/ Verification and Certification report , Fuel wood saving with improved cookstoves in Cambodia , January 10,2008-January 31,2008, Bureau Veritas Certification Holding SAS.
- /14/ Resoponse from owner KBS_10Apr22_NLS verification_CARs_FARs_CLs_v1.pdf

Appendix 1

Verification Protocol

Verification Protocol

TABLE 1 VERIFICATION REQUIREMENTS

CHECKLIST QUESTION	COMMENTS	Draft Concl	Final Concl
1 <i>Project implementation in accordance with the registered project design document</i> It is assessed if the VCS project activity has been implemented and operated as per the registered PDD¹ a Are all physical features of the proposed VCS project activity, proposed in the registered PDD, in place?	Yes. Regarding to Monitoring Report 1st Jan – 31st Dec 2009 and Site Visit during March 31st – April 2nd, 2010. All physical features of the proposed VCS project activity is still consistent with proposed in the registered PDD including (1) The specification of NLS (7 types: A00, A0, A1, A2, A3, A4 and A5). The type A1 was the most amount of production due to it is the best sold for NLS. (2) The areas where the NLS have been disseminated (9 different regions/states/provinces: Phnom Penh, Kandal, Kompong Speu, Prey Veng, Takeo, Siem Reap, Battambang, Kampong Cham and Kompong Chhnang.	OK	OK

CHECKLIST QUESTION	COMMENTS	Draft Concl	Final Concl
b Have the project participants operated the proposed VCS project activity as per the registered PDD?	Yes. Groupe Energies Renouvelables, Environment et Solidarites (GERES)-Cambodia is project participant who registered PDD is still operate this NLS - VCS project	OK	OK
c Is the proposed VCS project implemented against the description in the PDD?	Yes. Regarding to Site Visit during March 31 st – April 2 nd , 2010. All producers from sample regions/states/provinces (Prey Veng, Kampong Cham and Battambang) are still producing the NLS and sale to retailer / end user. The quantity of stoves sold is still recording in Stove Selling Logbooks and summarized into IT system by Geres guys every month. The quality of stoves which Monitoring by monitoring staff for stove efficiency every three months	OK	OK
d Was an on-site visit conducted?	Yes, during March 31 st – April 2 nd , 2010	OK	OK
e If not, justify the rationale of the decision.	Not applicable	-	-
2 Compliance of the monitoring plan with the monitoring methodology			
It is assessed if the monitoring plan of the proposed VCS project activity is in accordance with the applied methodology			
a Is the validated monitoring plan in accordance with the approved methodology applied by the proposed VCS project activity?	Yes. Refer to monitoring report 1 st Jan – 31 st Dec 2009 and National Cookstove User Survey 2009 that consistently relevant to the monitoring requirement in the PDD.	OK	OK
b If no, was a request for revision of the monitoring plan was done? (The DOE may request for revision of the monitoring plan covering the monitoring period under verification, for approval by the Board)	Not applicable	-	-

CHECKLIST QUESTION	COMMENTS	Draft Concl	Final Concl
c Are there any monitoring aspects of the project activity 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)?	No.	OK	OK
3 Compliance of monitoring with the monitoring plan It is assessed if monitoring of reductions in GHG emissions to result from the proposed VCS project activity is implemented in accordance with the monitoring plan contained in the registered PDD or the accepted revised monitoring plan.			
a Have the monitoring plan and the applied methodology been properly implemented and followed by the project participants?	Yes. Regarding to Monitoring Report 1 st Jan – 31 st Dec 2009, National Cookstove User Survey (2009) and Site Visit during March 31 st – April 2 nd , 2010, all monitoring plan had been implemented and followed by the project participants both Ex-Ante and Ex-Post such as Quantity of Stoves sold record, Traditional Fuel Consumption, Fuel Saving, Equipment Ratio, Stove Shelf Life And Leakage.	OK	OK
b Have all parameters stated in the monitoring plan, the applied methodology and relevant VCS Executive Board decisions been sufficiently monitored and updated as applicable, including:	-	-	-
i Project emission parameters?	Found number of stoves sold from producers' record raw data during year 2009 are different from units of stoves sold in Emission reduction calculation in Monitoring report (1 January -	CAR 1	OK

CHECKLIST QUESTION	COMMENTS	Draft Concl	Final Concl
	31 December 2009) such as Meng Chhun raw's data annual sold stoves 2,242 units but in Emission reduction calculation used 2,332 units ,Dul Sam Oun's data annual sold stoves 19,393 units but Emission reduction calculation used 19,649 units and others.		

CHECKLIST QUESTION	COMMENTS	Draft Concl	Final Concl
ii Baseline emission parameters?	Same as CAR 1.	CAR 1	OK
iii Leakage parameters?	Regarding to Monitoring Report 1st Jan – 31st Dec 2009, leakage deduction was 15% refer to the proposed methodology. For Transport Emission was proposed base on actual fuel consumption in year 2009 in term of car usage for NLS project. From diesel and gasoline's receipts sampling during the Site Visit on April 2nd, 2010 (receipt no. 1021153 and 1023209), both receipt samples have record in amount of USD payment consistent with IT record. The number of amount of USD payment for both diesel and gasoline were calculated to consumption of each fuel by divided by average monthly price (USD/L) as showed in Appendix 6 of Monitoring Report 1st Jan – 31st Dec 2009. At last step the GHG Transport Emission was calculate in monthly basis by equation $E = C * F * NCV * EF$ as details and explanation in Appendix 6 of Monitoring Report 1st Jan – 31st Dec 2009.	OK	OK
iv 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?	Yes. Refer to section D.5 of the VCS- PD that defined responsibilities and authorities. Currently, trained staffs (monitoring staffs) are in-charge to monitor and do the quality control following monitoring plan. Found many producers do not pass stove production and QC training such as Producer ID SAKC, MMKC, PMKC, PHCK; however, How to ensure that all stoves which use to be calculated for emission reduction are made from producers who have production and quality control process knowledge ?	CL 2	OK
c Is the accuracy of equipment used for monitoring in accordance with the relevant guidance provided by the VCS Executive Board and are equipment	-	-	-

CHECKLIST QUESTION	COMMENTS	Draft Concl	Final Concl
controlled and calibrated in accordance with the monitoring plan?			
i Are monitoring results consistently recorded as per approved frequency?	Same as CAR 1.	CAR 1	OK
ii Have quality assurance and quality control procedures been applied in accordance with the monitoring plan monitoring plan?	Yes, they have. Regarding to Site Visit during March 31st – April 2nd, 2010, the Geres's records showed as all quality assurance and quality control procedures been applied in accordance with the monitoring plan such as Efficiency Test including checking dimensions and conducting water boiling test. However, There is no Which documents, records and computer files related to VCS project should be keep ? How long to keep them, Where are they keep ? and Who response for control them ? In addition, It was found that Retailer stove name " Leng Chuo" located in the Kampong Cham, the monitoring activity of labelling stove number was not accordance with monitoring plan, Retailer has not recorded the numbering label sold, but the recorded base on serial number they have prepared, this activity will potential influence for deciding life time of stove	CL 1	OK
		FAR 1	OK

CHECKLIST QUESTION	COMMENTS	Draft Concl	Final Concl
4 Assessment of data and calculation of greenhouse gas emission reductions It is assessed if GHG emission reductions achieved by / resulting from the proposed VCS project activity are calculated applying the selected methodology			
a Is a complete set of data for the specified monitoring period is available? (If no, i.e., only partial data are available because activity levels or non-activity parameters have not been monitored in accordance with the registered monitoring plan, the DOE shall opt to either make the most conservative assumption theoretically possible in finalizing the verification report, or raise a request for deviation if appropriate).	Regarding to National Cookstove User Survey (2009) that it's precise objective to • Find out the first and second fuel consumption of the households. • Identify types of cookstove use. • Assess time spent of making food and boiling water of the cookstove user • Determine life time of cookstove • Determine cookstove user's satisfaction	CL 3	OK
	This report (National Cookstove User Survey (2009)) need to be more clarified and provide more information as following 1. Please provide more explanation about the household sample size selection that refer in page 5 paragraph 3 as selected by use confidence level of 98%, 2,484 households were taken from 399,954 total households. However, according to a report published by the Ministry of Planning in 2009, 33.7 percent of the population in Cambodia is between 0-14 years old. Respectively, the survey will not interview respondents in this particular age; therefore 1,671 sampled households were selected for the study. 2. Please provide more explanation about the frequency of user survey in 2009 including month and date of each user		

CHECKLIST QUESTION	COMMENTS	Draft Concl	Final Concl
	survey activities. 3. Please provide more additional results in year 2009 in term of Determine life time of cookstove.		

CHECKLIST QUESTION	COMMENTS	Draft Concl	Final Concl
b Has information provided in the monitoring report been cross-checked with other sources such as plant log books, inventories, purchase records, laboratory analysis?	Yes, validators did the cross checking with producer record (production quantity for each kind of stove, selling quantity), quality control record (recorded by quality control staff that including stove production control parameter such as diameter, number of holes), Water Boiling Test, Household Cooking Test. However, we found number of stoves sold in log books in many producers do not comply with number of stove sold in emission calculation sheet	CAR 1	OK
c Have calculations of baseline emissions, proposed VCS 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?	Yes. Refer to monitoring report 1 st Jan – 31 st Dec 2009 found same as CAR 1	CAR 1	OK
d Have any assumptions used in emission calculations been justified?	Yes. All assumptions used in emission calculation have been justified such as Household cooking Test ,The post of sale time (POST) , Equipment raito, Stove lifetime, NCV biomass, EF biomass and quantity of stoves sold. There is only one item (quantity of stoved sold) which have been correctd. (same as CAR 1)	CAR 1	OK

CHECKLIST QUESTION	COMMENTS	Draft Concl	Final Concl
e Have appropriate emission factors, IPCC default values and other reference values been correctly applied?	All emission factors IPCC default values and other reference values have been checked and found that are correctly applied.	OK	OK

TABLE 2 RESOLUTION OF CORRECTIVE ACTION / FORWARD ACTION / CLARIFICATION REQUESTS.

Draft report clarifications and corrective action requests by verification team	Reference to checklist question in Periodic Verification Checklist	Summary of project owner response	Verification team conclusion
CAR 1 : Found number of stoves sold from producers' record raw data during year 2009 are different from units of stoves sold in Emission reduction calculation in Monitoring report (1 January - 31 December 2009) such as Meng Chhun raw's data annual sold stoves 2,242 units but in Emission reduction calculation used 2,332 units ,Dul Sam Oun's data annual sold stoves 19,393 units but Emission reduction calculation used 19,649 units and others.	3-b-i	The stove sales data in the producer logbooks were checked against the electronic database that forms the basis of the GERES' stove sales estimates and emissions reductions calculations. • The data was checked by Ms KUY Putheary (Climate Change Unit Executive Assistant) and Mr NEANG Vanna (Monitoring Staff, Quality Control and Monitoring Unit). It was verified by Ms Kimberley BUSS (CDM Analyst, Climate Change Unit). • The revised stove sales data for each producer are outlined in Table 1. (attached in email*) • The revised emissions reductions are in the updated Monitoring Report (attached in email) and the updated	Table 1 : Revised stoves sales, 2009 was checked again and found number of stoves sold from KCK,SVKC,KTKC and PBTB producers are different from the previous version of stoves sales in 2009 table therefore KCK,SVKC,KTKC and PBTB logbooks which were requested and recounted by BVC staffs and verification team found that increasing stoves sold is reasonable and emissions reductions calculations were rechecked. the overall impact of stoves sold increasing is to decrease total emissions reductions because of the distribution of the different numbers and the extra stoves sold did not have time to generate many emission reductions. Response to CAR 1 is satisfactory and the same is closed.

Draft report clarifications and corrective action requests by verification team	Reference to checklist question in Periodic Verification Checklist	Summary of project owner response	Verification team conclusion
		emissions reduction calculation spreadsheet (attached in email). * attached in email refer to file name : KBS_10Apr22_NLS verification_CARs_FARs_CLs_v1.pdf /14/	
CL 1 :Which documents, records and computer files related to VCS project should be keep ? How long to keep them, Where are they keep ? and Who response for control them ?	3-c-ii	Details of document record and computer files related to VCS project were added to the NLS QCM Procedures Manual * attached in email refer to file name : KBS_10Apr22_NLS verification_CARs_FARs_CLs_v1.pdf	The NLS QCM procedure manual which is added details of control document and records was checked and found that it is completed. Response to CL 1 is satisfactory and the same is closed.
CL 2 : How to ensure that all stoves which use to be calculated for emission reduction are made from producers who have production and quality control process knowledge ? (found many producers do not pass stove production and QC training courses such as Producers ID SAKC,MMKC,PMKC,PHCK)	3-b-iv	Producers who have not been formally trained by GERES/DATE must be passed the 5-step QC process that allows inclusion in the NLS project. Refer to 5-stage QCM procedure for new producers⁶	A QCM procedure for new producers and the 5 steps QC process results of producers who have not been formally trained by GERES/DATE were checked and found that it is completed. Response to CL 2 is satisfactory and the same is closed.

Draft report clarifications and corrective action requests by verification team	Reference to checklist question in Periodic Verification Checklist	Summary of project owner response	Verification team conclusion
CL 3 : Regarding to National Cookstove User Survey (2009) that it's precise objective to - Find out the first and second fuel consumption of the household. - Identify types of cookstove use. - Assess time spent of making food and boiling water of the cookstove user - Determine life time of cookstove - Determine cookstove user's satisfaction This report (National Cookstove User Survey (2009)) need to be more clarified and provide more information as following 3.1 Please provide more explanation about the household sample size selection that refer in page 5 paragraph 3 as selected by use confidence level of 98%, 2,484 households were taken from 399,954 total households. However, according to a report published by the Ministry of Planning in 2009, 33.7 percent of the population in Cambodia is between 0-14 years old. Respectively, the survey will not interview respondents in this particular age; therefore 1,671 sampled	4-a	3.1 The National User Survey is updated by more detailed explanation of sample size. The project owner use 97% confidence level to select sample size from a total of 399,954 urban households in the provinces surveyed. Therefore a sample population of 1,671 were calculated by following step. At confidential level 97% Sample size (n) = $399,954 / [1+399,954*(0.03)^2] = 1,108$ Households (Yamane equation) This 1,108 was then corrected twice: (1) For the possibility that people under 14 years may be the only household members present at the time that the surveyors visit the family. Based on a report published by	Response to CL-3 is satisfactory and the same is closed

Draft report clarifications and corrective action requests by verification team	Reference to checklist question in Periodic Verification Checklist	Summary of project owner response	Verification team conclusion
households were selected for the study. 3.2 Please provide more explanation about the frequency of user survey in 2009 including month and date of each user survey activities. 3.3 Please provide more additional results in year 2009 in term of Determine life time of cookstove.		the Ministry of Planning in 2009, 33.7% of the population in Cambodia is between 0-14 years old, so the sample size was increased by 33.7% to anticipate the risk that only household members present during the surveyors' visit would be under 14 years old. $1,108 + (0.337 \times 1,108) = 1,481$ (2) For the fact that the population data was from 2007 and it is likely that the population in urban areas has increased since that time. Therefore the project owner added another 190 households to the total population surveyed in Phnom Penh, based on the assumption that most of the population increase would be concentrated in Phnom Penh due to mitigation to urban centres.	

Draft report clarifications and corrective action requests by verification team	Reference to checklist question in Periodic Verification Checklist	Summary of project owner response	Verification team conclusion																		
		1,481+190 = 1,671 3.2 The date of National User Survey in 2009 for difference area <table><thead><tr><th>Survey area</th><th>Date of surveys</th></tr></thead><tbody><tr><td>Kampot</td><td>5 Nov 2009</td></tr><tr><td>Sihanoukville</td><td>6-8 Nov 2009</td></tr><tr><td>Siem Reap</td><td>5-7 Nov 2009</td></tr><tr><td>Battambang</td><td>9-10 Nov 2009</td></tr><tr><td>Kampong Thom</td><td>5-6 Nov 2009</td></tr><tr><td>Kampong Chhnang</td><td>8-9 Nov 2009</td></tr><tr><td>Kampong Speu</td><td>9-10 Nov 2009</td></tr><tr><td>Phnom Penh</td><td>24-30 Nov 2009</td></tr></tbody></table>	Survey area	Date of surveys	Kampot	5 Nov 2009	Sihanoukville	6-8 Nov 2009	Siem Reap	5-7 Nov 2009	Battambang	9-10 Nov 2009	Kampong Thom	5-6 Nov 2009	Kampong Chhnang	8-9 Nov 2009	Kampong Speu	9-10 Nov 2009	Phnom Penh	24-30 Nov 2009	
Survey area	Date of surveys																				
Kampot	5 Nov 2009																				
Sihanoukville	6-8 Nov 2009																				
Siem Reap	5-7 Nov 2009																				
Battambang	9-10 Nov 2009																				
Kampong Thom	5-6 Nov 2009																				
Kampong Chhnang	8-9 Nov 2009																				
Kampong Speu	9-10 Nov 2009																				
Phnom Penh	24-30 Nov 2009																				

Draft report clarifications and corrective action requests by verification team	Reference to checklist question in Periodic Verification Checklist	Summary of project owner response	Verification team conclusion
		3.3 The issue of stove lifetime will be resolved in 2011, because date stamping of stoves commenced in January 2009 and, by mid-2011, will provide evidence that the stoves last for at least 2.5 years. The project owner already being conservative in their 2.5-year estimate-initially, based on a GERES study, they assumed the stove lifetime to be 3 years but then reduced it to 2.5 years during the second verification.	
FAR 1 : It was found that Retailer stove name “ Leng Chuo” located in the Kampong Cham, the monitoring activity of labelling stove number was not accordance with monitoring plan, Retailer has not recorded the numbering label sold, but the recorded base on serial number they have prepared, this activity will potential influence for deciding life time of stove.	3-c-ii	Procedure Quality control for seller has been established, Documented and refresh training for ensuring implementation accordance with relevant procedure has been carried out	Follow up action Forward Action Request has been Verified and found OK and hence FAR 1 is closed

Appendix 2- Competence of the Verification Team

Mr. Eduardo Galvão – Bureau Veritas Certification Internal Technical Reviewer- Bachelor degree in Engineering of Mechanical Production and Master degree in Industrial Administration, He has experiences in Engineering Maintenance for more than five years and Consultancies and Audit of System Administration, Analysis and Development more than 7 years, He has undergone intensive training on Clean Development Mechanism and Has been already involved CDM/JI Validation and Verification project activities.

Mr. Kusheru Wibowo - Bachelor degree in Chemical Engineering – Bureau Veritas Certification Team Leader. He has 9 years experience in Polymerization Plant and He has been working with Standards in Bureau Verification Certification for QMS ISO 9001, EMS ISO 14001 and Social auditing for more than 9 years. He has undergone intensive training on Clean Development Mechanism He has involved in n 6 CDM project validation/verification activities.

Mr.Nattapat Teeranantaniid - Bachelor degree in Environment Engineering (Honor and rank 1st in class) - Bureau Veritas Certification Team member. He has 7 years of environmental consultant and engineering experience such as Wastewater treatment plants design and operating, Hazardous waste treatment design, Air pollution control, Environmental Impact Assessment study, Pollution control management study, Energy saving projects and others. He has received the training and obtained the certificates of EMS ISO14000 lead auditor and CDM lead verifier.

Mr.Pongsakorn Sa-ngapon - Bachelor degree in Industrial Chemistry, Master degree in Environmental Science and Master degree in Business Administration - Bureau Veritas Certification Team member. He has 3 years of QA/QC in manufacturing factories, 4 years of Environmental Impact Assessment (EIA) in consultant firms and 5 years of Environmental Management in 2 x 700 MW Coal Fired Power Plant. He has received the training and obtained the certificates of EMS ISO14001:2004 lead auditor and CDM lead verifier.