VERIFICATION AND CERTIFICATION REPORT

EDF Trading Limited

Shandong Gaotang 30MW Biomass Power Generation Project

(UNFCCC Ref. No.: 1375)

(MP1 from 20/03/2008 to 25/03/2009) (Both days inclusive)

SGS Climate Change Programme
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Date of Issue:	**Project Number:**
08-08-2012	CDM.VER0966 MP1
Project Title:	
Shandong Gaotang 30MW Biomass Power Generation Project	
Organisation:	**Client:**
SGS United Kingdom Limited	EDF Trading Limited
Publication of Monitoring Report:	
Monitoring Period:	From 20/03/2008 to 25/03/2009
First Monitoring Report Version and Date:	Version 1.0, 15/06/2009
Final Monitoring Report Version and Date:	Version 4.0, 08/08/2012

Summary:

SGS United Kingdom Ltd has performed the 1st Periodic verification of the CDM project Shandong Gaotang 30MW Biomass Power Generation Project and (UNFCCC Ref. 1375). The verification includes confirming the implementation of the approved revised Project Design Document Version 07 dated 02/10/2011 (approved by CDM EB on 02/03/2012), and the application of the monitoring methodology as per ACM0006, Version 04 Valid from 01/11/2006 to 17/05/2007. A site visit was conducted to verify the data submitted in the monitoring report. SGS confirms the following has been reviewed;

(a) The approved revised PDD and Revised Monitoring Plan and the corresponding validation reports;

(b) Monitoring report and Emission Reduction Calculation Spreadsheet;

(c) The applied monitoring methodology;

(d) Relevant decisions, clarifications and guidance from the CMP and the CDM Executive Board;

(e) All information and references relevant to the project activity's resulting in emission reductions.

This registered biomass power generation project utilizes local surplus biomass residues (Cotton Straw, Wood Residues and Wheat Bran) for generating electricity. The total installed capacity is 30MW. It is estimated that the project can deliver 187,626MWh/year of electricity to the North China Grid (NCG), which consume nearly 247,506 tons biomass residues (on wet base) per year. The monitoring plan of the project had been revised together with the registered PDD and was approved by CDM EB on 02/03/2012.

SGS confirms that the project is implemented in accordance with the validated and approved revised Project Design Document. The monitoring system is in place and the emission reductions are calculated without material misstatements. The assessment team's opinion relates to the projects GHG emissions and the resulting GHG emission reductions reported and related to the valid and registered project baseline and monitoring and its associated documents. Based on the information seen and evaluated the assessment team confirm that the implementation of the project has resulted in 143,007 tCO2e emission reductions during period from 20/03/2008 up to 25/03/2009.

Subject:			
CDM Verification			
Verification Team:			
Lenore Yin Lei – Team Leader/ Lead Assessor Yi Liao - Sectoral Scope Expert (TA 1.1)/ Assessor Tracy Zheng Ying – Local Assessor (P.R.China)			☒ No Distribution (without permission from the Client or responsible organisational unit)
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Name: Siddharth Yadav Date: 13/09/2012			
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Abbreviations

CAR	Corrective Action Request
CDM	Clean Development Mechanism
CER	Certified Emission Reductions
CL	Clarification Request
CO_2	Carbon Dioxide
CO_2e	Carbon Dioxide Equivalent
EF	Emission Factor
ETN	Electricity Transaction Note
FAR	Forward Action Request
GHG	Greenhouse Gas(es)
IPCC	Intergovernmental Panel on Climate Change
MP	Monitoring Plan
MR	Monitoring Report
MRR	Monthly Reading Record
NCG	North China Grid
NCV	Net Calorific Value
PDD	Project Design Document
PP	Project Participant
PPA	Power Purchase Agreement
P.R.China	People's Republic of China
RMP	Revision of Monitoring Plan
SGS	SGS United Kingdom Ltd
UK	United Kingdom of Great Britain and Northern Ireland
UNFCCC	United Nations Framework Convention on Climate Change
VVM	Validation and Verification Manual

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1. Introduction

1.1 Objective

SGS United Kingdom Ltd has been contracted by EDF Trading Limited to perform an independent verification of its CDM project Shandong Gaotang 30MW Biomass Power Generation Project. CDM projects must undergo periodic audits and verification of emission reductions as the basis for issuance of Certified Emission Reductions (CERs).

The objectives of this verification exercise are, by review of objective evidence, to establish that:

- The emissions report conforms with the requirements of the revised monitoring plan in the approved revised PDD and the approved methodology; and
- The data reported are complete and transparent.

1.2 Scope

The scope of the verification is the independent and objective review and ex post determination of the monitored reductions in GHG emission by the project activity. The verification is based on the validated and registered project design document and the monitoring report. The project is assessed against the requirements of the Kyoto Protocol, the CDM Modalities and Procedures and related rules and guidance.

SGS has, based on the recommendations in the Validation and Verification Manual, employed a risk-based approach in the verification, focusing on the identification of significant reporting risks and the reliability of project monitoring.

The verification is not meant to provide any consulting towards the Client. However, stated requests for clarifications and/or corrective actions may provide input for improvement of the project design.

1.3 Project Activity and Period Covered

This engagement covers emissions and emission reductions from anthropogenic sources of greenhouse gases included within the project boundary of the following project and period.

Title of Project Activity:	Shandong Gaotang 30MW Biomass Power Generation Project
UNFCCC Registration Number:	1375
Monitoring Period Covered in this Report	From 20/03/2008 to 25/03/2009
Project Participants	National Bio Energy Co., Ltd. (P.R.China)
	EDF Trading Limited, (United Kingdom of Great Britain and Northern Ireland)
Location of the Project Activity:	Gaotang County, Shandong Province, P.R.China

This registered biomass power generation project utilizes local surplus biomass residues (Cotton Straw, Wood residues and wheat bran) for generating electricity. The total installed capacity is 30MW. It is estimated that the project can deliver 187,626MWh/y of electricity to the North China Grid (NCG), which consume nearly 247,506 tons biomass residues (on wet base) per year. The monitoring plan of the project had been revised together with the registered PDD and was approved by the CDM EB on 02/03/2012.

2. Methodology

2.1 General Approach

SGS' approach to the verification is a two-stage process.

In the first stage, SGS completed a strategic review and risk assessment of the projects activities and processes in order to gain a full understanding of:

- Activities associated with all the sources contributing to the project emissions and emission reductions, including leakage if relevant;
- Protocols used to estimate or measure GHG emissions from these sources;
- Collection and handling of data;
- Controls on the collection and handling of data;
- Means of verifying reported data; and
- Compilation of the monitoring report.

At the end of this stage, SGS produced a Periodic Verification Checklist which, based on the risk assessment of the parameters and data collection and handling processes for each of those parameters, describes the verification approach and the sampling plan.

Using the Periodic Verification Checklist, SGS verified the implementation of the revised monitoring plan and the data presented in the Monitoring Report for the period in question. This involved a site visit and a desk review of the monitoring report. This verification report describes the findings of this assessment.

2.2 Verification Team for this Assessment

Assessment Team	
Name	**Role**
Lenore Yin Lei	Team Leader/ Lead Assessor
Yi Liao	Sectoral Expert (TA 1.1)/ Assessor
Tracy Zheng Ying	Local Assessor

Technical Reviewer Team	
Name	**Role**
Linda Hu Mudan	Technical Reviewer
Jumson Fu Qiang	Sectoral Scope Expert (TA 1.1)

2.3 Means of Verification

2.3.1 Review of Documentation

The validated PDD, the monitoring report submitted by the client and additional background documents related to the project performance were reviewed. A complete list of all documents reviewed is attached in section 8 of this report.

2.3.2 Site Visits

As part of the verification, the following on-site inspections have been performed by members of the assessment team.

Site Visit 1

Location: Gaotang County, Shandong Province, P.R.China	
Date: 02/07/2009 to 04/07/2009	
Coverage:	**Source of Information / Persons Interviewed**
1. An interview with project participants, including reviewing the implementation statues of the project, key physical components of the project, monitoring plan and staff training records; 2. Visual inspection on key physical components and spatial configuration of the operating and monitoring system of the entire project; 3. A review of the Monitoring Report, meter reading records, sales receipts and wind turbine generation logbooks; 4. Collection of the calibration certificates of the metering system and the qualification for the calibrating entity; 5. Inspection of the control room, instrument room, transformer substation; 6. Review of calculations and assumptions made in determining the GHG data and emission reductions; 7. Identification of quality control and quality assurance procedures in place to prevent or identify and correct any errors or omissions in the reported monitoring parameters.	Mr. Qin Chengshui National Bio Energy Gaotang Co., Ltd.; Ms. Yu Lu National Bio Energy Gaotang Co., Ltd.; Mr. Lin Liang National Bio Energy Gaotang Co., Ltd.; Ms. Guo Xin National Bio Energy Gaotang Co., Ltd.; Mr Pan Qizhang National Bio Energy Gaotang Co., Ltd.; Ms Liu Hongmei National Bio Energy Gaotang Co., Ltd.; Ms. Liu Wancheng National Bio Energy Gaotang Co., Ltd.; Ms. Chen Fang National Bio Energy Gaotang Co., Ltd.; Mr. Guo Zhigang, Project Manager, Chinese Renewable Energy Industries Association; Ms. Zhao Yanan, EDF Trading Limited.

Site Visit 2

Location: Gaotang County, Shandong Province, P.R.China	
Date: 15/08/2011 to 16/08/2011	
Coverage:	**Source of Information / Persons Interviewed**
1. An interview with project participants, including reviewing the implementation statues of the project, key physical components of the project, monitoring plan and staff training records; 2. Visual inspection on key physical components and spatial configuration of the operating and monitoring system of the entire	Mr. Zhang Guanghu National Bio Energy Gaotang Co., Ltd.; Ms. Yu Lu National Bio Energy Gaotang Co., Ltd.; Mr. Su Youwei National Bio Energy Gaotang Co., Ltd.;

project; 3. A review of the Monitoring Report, meter reading records, sales receipts and wind turbine generation logbooks; 4. Collection of the calibration certificates of the metering system and the qualification for the calibrating entity; 5. Inspection of the control room, instrument room, transformer substation; 6. Review of calculations and assumptions made in determining the GHG data and emission reductions; 7. Identification of quality control and quality assurance procedures in place to prevent or identify and correct any errors or omissions in the reported monitoring parameters.	Ms. Zhang Tao National Bio Energy Gaotang Co., Ltd.; Mr Wang Lei National Bio Energy Gaotang Co., Ltd.; Ms Li Yuming National Bio Energy Gaotang Co., Ltd.; Ms. Chen Fang National Bio Energy Gaotang Co., Ltd.; Mr. Zhao Hui National Bio Energy Gaotang Co., Ltd.; Ms Ma Lifang, Project Manager, Chinese Renewable Energy Industries Association; Mr. Wu Jiuhuan, EDF Trading Limited.

2.4 Reporting of Findings

As an outcome of the verification process, the team can raise different types of findings

In general, where insufficient or inaccurate information is available and clarification or new information is required the team shall raise a Clarification Request (CL) specifying what additional information is required.

Where a non-conformance arises the team shall raise a Corrective Action Request (CAR). A CAR is 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.

The verification process may be halted until this information has been made available to comply with the requirements of the CDM Executive Board. Failure to address a CL may result in a CAR. Information or clarifications provided as a result of a CL may also lead to a CAR.

A clarification request (CL) will be raised if information is insufficient or not clear enough to determine whether the applicable CDM requirements have been met. All CARs and CLs raised during verification shall be resolved prior to submitting a request for issuance.

Corrective Action Requests and Clarification requests are raised in the Periodic Verification Checklist. The Project Developer is given the opportunity to “close” outstanding CARs and respond to CLs and FARs.

Forward Action Requests (FARs) may be raised during verification for actions where the monitoring and reporting require attention and/or adjustment for the next verification period. FARs may be raised which are for the benefit of future projects and future verification actors. These have no impact upon the completion of the verification activity.

All CARs, CLs and FARs for this verification period are included in this report.

2.5 Internal Quality Control

Following the completion of the assessment process and a recommendation by the Assessment Team, all documentation will be forwarded to a Technical Reviewer. The task of the Technical Reviewer is to check

that all procedures have been followed and all conclusions are justified. The Technical Reviewer will either accept or reject the recommendation made by the assessment team.

3. Verification Findings

3.1 Project Implementation - General

Referring to the project information on the UNFCCC website, http://cdm.unfccc.int/Projects/DB/TUEV-SUED1191857086.36/view, the project was registered on 20/03/2008 against ACM0006 Version 04 (/1/). The first crediting period is from 20/03/2008 to 19/03/2015 (renewable). This verification covers the first monitoring period from 20/03/2008 to 25/03/2009. The start date of this monitoring period is 20/03/2008, the day of the starting date of the crediting period. The end date of this monitoring period is 25/03/2009, which is still within the first crediting period.

During the on-site visit for the first periodic verification, the assessment team identified that the actual implementation status for Shandong Gaotang 30MW Biomass Power Generation Project (hereafter referred to as the project) is inconsistent with registered PDD Version 05 dated 24/09/2007(/3/). Applicable biomass residues identified in the registered PDD is relatively narrow (only cotton stalk has been identified), while three kinds of biomass residues (cotton stalk, wood residues and wheat bran) have been utilized by this project in the actual implementation stage. The assessment team also found in the revised PDD/2/, total estimated power generation by this project has been increased to 187,626 MWh/year (in original PDD the estimation is 145,000MWh/year) and total biomass consumption in this project has been re-estimated to be 247,506 tons (original estimation in PDD 121,000tons). In the revised PDD(/2/), estimated power generation amount has been increased by 29.22% and estimated quantities of biomass residues combusted in the project has been increased by 105%. These changes are permanent changes from the registered project activity and the project has never been implemented in accordance with the description in the registered PDD (/3/). The proposed changes have been validated by the assessment team. As per the three scopes defined in EB 48 Annex 66(/12/), applying biomass types (wood residues and wheat bran) other than cotton stalk and the changes in estimated annual power generation may have an impact on application of the methodology and the additionality of the project. Through further justification provided by the PP, the assessment team considered that ACM0006 version 04 is still applicable to the project. The validation also confirms that the project IRR after change still does not cross the benchmark. Without CER revenue, project IRR is even lower than 0%. The project is still additional. Based on EB48 Annex 67(/13/), the final validation opinion (/8/) has been issued by the assessment team on 19/11/2011, and submitted to EB together with revised PDD version 07 (/2/). The revised PDD version 07 dated 02/10/2011 was approved by the CDM EB on 02/03/2012, and is available on the UNFCCC website.

This is a biomass residues-fired power generation project. The construction of the project started since 01/04/2006. The project started a trial operation on 29/01/2007 and the full commercial operation started in April 2008. Relevant project implementation records (/11/) have been provided by the PP and verified by the assessment team.

By checking the line connection diagram of the electricity system of the project (/9/) and the Power Purchase Agreement (PPA,/10/), it is confirmed that the electricity generated by the power plant is delivered to North China Grid (NCG). Therefore, the project boundary is consistent with the approved revised PDD.

Project participants (PPs) have set up CDM manual and other internal management procedures. During this monitoring period, the project has been well operated following CDM manual and management procedure (/14/). The staffs are well trained and are qualified (/15/.). During this monitoring period, no exchange of monitoring equipments happened. Reported information related to installed technical equipments (i.e. Boiler, Turbine and Power generator) have been checked against the technical agreements (/16/) and the actual installed equipments. Information consistency has been confirmed by the assessment team.

Through document review and on-site visit, it has been confirmed by the assessment team that the project participants have operated the CDM project activity as per the revised PDD and Revised Monitoring Plan (RMP). According to guideline EB54_Annex 34 “Guidelines for completing the Monitoring Report form (CDM-MR)”, in MR section B.1 the description should include a brief description of: (i) events or situations that occurred during the monitoring period, which may impact the applicability of the methodology, and (ii) how the issues resulting from these events or situations are being addressed. Through document review, no specific information presented in MR, corrective action needs to be provided by the PP. Moreover, inappropriate future tense has also been identified by the assessment team. The monitoring parameters

($EF_{km,CO2}$,y, $FF_{project,plant,i,y}$, ρ_{diesel}, $EF_{CO2,FF,I}$,NCV_i, NCV_k*$EF_{burning,CH4,k,y}$, $EF_{CH4,BF}$) which have been identified as monitoring parameters in the approved revised PDD. Through document review, the assessment team identified these parameters have been reported in section D.1 Data and Parameters determined at registration and not monitored during the monitoring period. Corrective action needs to be provided and CAR#10 is therefore raised by the assessment team.

The monitoring report has been revised based on the EB54 Annex 34(/52/). Two permanent changes occurred in the actual implementation stage which may impact the applicability of the monitoring process has been re-analysed in the revised PDD and validated by the assessment team. Based on the information presented in the revised PDD and the relevant supporting evidence provided by the PP, the assessment team considered that the ACM0006 version 04 is still applicable for this project. The revised PDD has been approved by EB. For detailed information please refer to the revised PDD (/2/) and validation opinion (/8/) issued by the assessment team.

Furthermore, the inappropriate future tense has been removed and all the monitoring parameters have been reported in the correct section. All the information (data and variables) provided in the final version of monitoring report (/5/) are in compliance with that is stated in the RMP and in line with the requirement presented in the EB54 Annex 34. CAR #10 is therefore closed by the assessment team.

There is no additional source of GHG emissions attributable to the project. No fossil fuels were observed to be used for power generation by the project during this monitoring period.

Through document review, the assessment team identified that in MR version 1.0, the reported value (178,263 tCO_2e) of total emission reductions during the period from 20/03/2008 to 25/03/2009 is significantly higher (24.7%) than that estimated emission reductions in the registered PDD (143,007tCO_2e = 140,695tCO_2e / 365 * 371) for the same period. Clarification request (**CL#8**) is therefore raised by the assessment team.
During the validation stage, the PP clarified that the permanent change happened during the actual implementation stage. Based on the updated PDD, the total estimated annual power generation by this project has been increased to 187,626 MWh/year and the re-estimated annual emission reduction is 180,881 tCO_2e. In accordance with the Guidelines on Completeness Check of Request for Issuance (Annex 68, EB 48,/17/), the final version of monitoring report contains a comparison of the actual emission reduction claimed for this monitoring period with the estimate in the approved revised PDD. The estimated emission reductions were calculated as 183,854tCO_2e (180,881tCO_2e/365 days * 371 days =183,854 tCO_2e) for the period 20/03/2008 to 25/03/2009 (371 days) as per the estimation in the revised PDD. The actual emission reduction has been verified as 177,513tCO_2e, which is 3.45% lower than the ex-ante estimate. Based on the information in the approved revised PDD, the assessment team confirmed that no significant increase in estimated emission reductions.

Based on the EB66 meeting report Para 77(/18/), the EB agreed to accept the changes for the PDD and allow subsequent requests for issuance under the condition that the annual amount of CERs to be issued to the project activity shall be capped at the average annual emissions reductions estimated in the original registered PDD. Therefore, the final requested ER in this monitoring period is 143,007 tCO_2e. Relevant description has been applied in the final version of the MR and verified to be correct. **CL#8** is closed by the assessment team.

As per information and reporting checklist version 2.0(/53/), it is requested that the ERs spreadsheet shall contain the formulae of calculation that are shown in the spreadsheet cells whenever possible. Through document review, the assessment team identified that the ER spreadsheet version 3.0(/6/) are not fully in line with this requirement. **CAR#11** is therefore raised by the assessment team. Relevant revision has been made by the PP. Through document review, the assessment team confirmed that updated ER calculation spreadsheet is in line with the specific EB requirements. **CAR#11** is therefore closed by the assessment team.

3.2 Remaining Issues, CAR's, FAR's from Previous Validation or Verification

This is the 1st periodic verification for the project. There are no remaining issues from the validation stage (/7/).

3.3 Compliance of the monitoring plan with the monitoring methodology.

In accordance with paragraphs 199-203 of the Validation and Verification Manual version 01.2 dated 30/07/2010 (/4/), the assessment team verified the registered monitoring plan against the approved methodology ACM0006 version04 (/1/). Through document review, the assessment team identified that the registered monitoring plan needed to be revised. Due to narrow identification for the biomass residue in the original PDD, the monitoring plan has been revised to be suitable for the monitoring of three types of biomass residues (Cotton stalk, Wood residues and Wheat bran). By applying the proposed revision of monitoring plan, monitoring processes have been improved and relevant descriptions of monitoring procedures are specified in more details. Referring to the findings raised by the assessment team during the first periodic verification, the addition of monitoring parameters that were missing in the registered monitoring plan (i.e. $EF_{CH4,BF}$) and inconsistent factors with applied methodology (i.e. parameter NCV_k data source and measurement method) and actual monitoring activities (i.e. parameter EG_y monitoring equipment level of accuracy) have been revised to be consistent with applied methodology and actual implementation status. Detailed information for each monitoring parameter and finding overview will be further discussed in section 3.4. The assessment team confirms that the approved revised monitoring plan is in accordance with the approved methodology ACM0006 version 04.

3.4 Completeness of Monitoring

The assessment team verified the compliance of the monitoring with the approved revised monitoring plan in accordance with paragraphs 204-206 of the VVM version 01.2. During the 1st monitoring period, the monitoring procedure has been carried out in accordance with the approved revised monitoring plan. All monitoring parameters have been sufficiently monitored according to the approved revised monitoring plan.

Relevant information on parameters, as well as verification results has been presented in the following paragraphs.

3.4.1 EG_y: Net quantity of electricity delivered to grid in year y **(Baseline Emission Parameter)**

As per the registered monitoring plan, EG_y is continuously measured by meters with the accuracy of 0.2%. During the on-site visit, it was found that the installed electric meters' accuracy level is 0.5% (accuracy level lower than 0.2%). Action needs to be taken so that actual practice can be in compliance with the monitoring plan. **CAR#1** was raised by the assessment team.

The PP clarified that the electric meter is installed and controlled by the regional power distribution company (Liaocheng Power Supply Bureau) and the project owner had no right to set the accuracy level of the monitoring device. The installation of electric meter with 0.5 accuracy level in 30 MW power stations is in line with Chinese industrial standard DL/T 448-2000 (/19/).

The following solution have been applied by the PP: 0.5% of electricity delivery amount will be deducted from total EG_y for each monitoring period. The assessment team considered this is a conservative solution for meter accurate level decrease.

Revision made by the PP ensures compliance between the actual monitoring and the revised monitoring plan. EG_y is continuously measured by meters with the accuracy not less than 0.5. Electricity delivered to the grid will be measured by meter installed. **CAR#1** is therefore closed by the assessment team.

The bidirectional meter (S/N 200306083C0123) has been installed in the 220kV Huixin substation, continuously measured the electricity delivered to the grid. Designated personnel from the grid company read the main meter (At 24:00) within the last ten day of a month and recorded the readings of the meters. In the end of each month, the grid company informed the project owner of the amount of electricity delivered to the grid using Electricity Transaction Notes (ETNs), then the project owner checked with their own on site installed bidirectional meter reading records, and if there was no obvious difference, the power plant would issue the electricity sales invoices to the grid company. The data on the Monthly Reading Records (MRRs) (/20/) and ETNs (/21/) issued by the grid company have been provided and verified by assessment team against reported data. Data presented in the sales invoices (/22/) have been applied for cross check reference. Specific assessment has been carried out for the monitoring period from 20/03/2008 to 29/03/2008, relevant meter reading records and statement (/23/) for the electricity measured during this period have been provided and information consistency has been confirmed. After data comparison, conservative values between the measured results and sales receipts have been applied for final ER

calculation. This is accepted by assessment team since this is a conservative option. The calculation in the spreadsheet has been walked through and the reported values in the final version of the MR and ER calculation spreadsheet were verified to be correct. Based on the RMP(/2/), the final reported EG_y only included the net electricity delivered to the grid. For the electricity attributable to the project activity $EG_{PJ,y,}$ have been included in the project emission. Referring to this change, relevant revision has been made in the final version of MR and ER calculation spreadsheet.

The final verified measured results for EG_y are 180,722.52 MWh. As per the revised PDD, the PPs decided to discount 0.5% of EG_y monitored by electricity meter with accuracy 0.5 for conservation. In MR version 3.1, the reported value of EG_y in MR version 3.1 section D.2 is 180,722.52 MWh (175,318, deducted 5%). The reported deduction method is inconsistent with the revised PDD and the reported value is inconsistent with the result verified by the assessment team. CAR#12 is therefore raised. The PP clarified that the information reported in the MR Version 3.1 section D is incorrect, relevant revision has been made based on the ER calculation spreadsheet. As per the RMP, 0.5% of delivered electricity has been deducted from the measured results. The final reported value is 179,818.91MWh. CAR#12 is therefore closed by the assessment team.

3.4.2 $BF_{k,y}$: Quantity of biomass residue type k combusted in the project plant during the year y

According to the applied methodology and approved revised monitoring plan, quantity of biomass residue type k combusted in the project plant during the year y ($BF_{k,y}$) should be continuously measured by weight meters installed at the project site. Biomass purchases invoices should be applied as cross check reference to ensure the data quality. The measurement results should be cross-checked with the energy balance which is based on the purchased quantities and stock changes.

Three types of biomass residues including cotton straw (Type 1), wood residues (Type 2), and wheat bran (Type 3) have been utilised by the project during this monitoring period. According to the inventory of biomass residues (/24/), all the biomass sources were stored in the storage room for no more than one year which was verified by the assessment team during the onsite visit. $BF_{i,y}$ was continuously measured by two electronic truck scales (Electric truck scale #1 and Electric truck scale #2) installed at the project site, owned and operated by the project owner. For each batch of biomass residues, designated operator recorded the biomass residue type, supplier and arriving time, then records the fully loaded vehicle (gross weight) and empty vehicle weight (tare weight) to get the quantity of biomass (Net weight) of this biomass residues type for each batch. The weight values are recorded into daily weighing records, and monthly data are summarized into monthly weighting records (/25/). The actual implementation status corresponds with the applied methodology and revised monitoring plan. The inventory table and biomass purchase receipts (/24/) has also been used as cross check reference.

All raw data was checked by the assessment team and the calculation process has also been verified. Daily weighed records for biomass residues have been randomly selected and verified. According to ACM0006 version 04, Parameter $BF_{k,y}$ (Quantity of biomass residue type k combusted in the project during the year y in a volume or mass unit) needs to adjust for the moisture content in order to determine the quantity of dry biomass.

The reported information in monitoring report version 1.0 did not consider the biomass moisture content. Therefore, the BF_y values presented in the monitoring report version 1.0 are not for the dry biomass. **CAR #6** is raised.

Based on the revised monitoring plan and applied methodology, quantity of three kinds of biomass residues have been reported separately in the final version of the MR. Measured moisture content (discussed in section 3.4.3) has been taken into account, the final revised value have been provided in the MR and ER spreadsheet and verified to be correct. **CAR#6** is therefore closed by the assessment team.

Through document review, the assessment team identified that the reported values for parameter $BF_{k,y}$ in monitoring report version 3.1 section E Table 7 are inconsistent with the assessment verified results and the calculation results presented in the ER spreadsheet. CAR#15 is therefore raised by the assessment team. The PP clarified that reported values are incorrect and relevant revision has been made based on the ER calculation spreadsheet. The assessment team verified that reported values in Table 7 in the final version of MR are correct. **CAR#15** is therefore closed.

In compliance with the approved revised monitoring plan, $BF_{i,y}$ was crosschecked with the annual energy balance that is based on purchased quantities and stock changes. Energy efficiency in this monitoring period is 27.28%. After consulting with sectoral scope expert and comparing with public available article "Biomass Power Generation Technology, Issued by Shandong Electric Power Engineering Consulting Institute Corp. Ltd (/51/), the assessment team notified that the average energy efficiency for the biomass power generation project is around 30%. Therefore, the assessment team confirmed that the energy efficiency measured for this project is reliable.

3.4.3 Moisture content of the biomass residues

In the registered PDD section B.7.1 (page 35), the parameter "Moisture content of the biomass residues" is continuously monitored by moisture analyzer, measured in collection point and in power plant. During the onsite visit for the project, it was found that this parameter is measured by moisture analyzer installed in the power plant laboratory. Action needs to be taken so that actual practice can be in compliance with the monitoring plan. **CAR#4** is therefore raised by the assessment team.

In the RMP, description of measurement methods and procedures to be applied for this parameter is: Moisture content of the biomass residues will be both measured in the power plant and calculated for the mean values at least annually. This revision ensures the completeness of the monitoring process and compliance between the revised monitoring plan and the actual monitoring procedure. **CAR#4** is therefore closed by the assessment team.

In the actual monitoring process, each kind of biomass residues have been selected and sampled when they are transported to the project site. The operator takes at least three sample of each kind of biomass residues for each measurement. A set of moisture analyzer has been installed in the power plant. The measurement results (/26/) were recorded in the daily lab analysis report summarized in monthly measure report, and are both kept electronically and in paper print.

The reported values of moisture content of the biomass residues are the mean value of measured values for the corresponding kind of biomass residues during the corresponding month. Monthly reported spreadsheets (/26/) have been applied to calculate the mean value of moisture content for each biomass residues. All the raw data from analysis lab and the calculation process were verified by SGS assessors and found to be correct.

3.4.4 NCV_k: Net Calorific Value of biomass residue type k consumed by the project

According to ACM0006 ver04, the parameter NCV_k (Net Calorific Value of Biomass Residue type K) need to be measured at least every six months.
In the registered PDD (page 35), the parameter NCV_k is extracted from public available data source (China Energy Statistical Yearbook). The monitoring plan is not in compliance with the methodology applied. **CAR #2** is raised requiring PP to revise the monitoring plan.

In the RMP(/2/), NCV_k is amended as an onsite monitored parameter as per ACM0006 Version 04 and parameter NCV_k represents all types of biomass residues which will be applied to the project activity. Revision of the description of measurement methods makes the revised MP in compliance with the applied methodology. NCV_k value of biomass residues will be measured in the chemical laboratory. Relevant changes for parameter NCV_k are also in line with the project actual implementation status. **CAR#2** is therefore closed by the assessment team.

During the official operational process, each kind of biomass residues have been selected and sampled when they are transported to the project site. A set of calorimeters are installed at the analysis lab of the plant. The operator takes at least three sample of each kind of biomass residues for each measurement.

The measurement results (/27/) were recorded in the daily lab analysis report summarized in monthly report, and are both kept electronically and in paper print.

The reported values of NCV_i are the mean of measured values for the corresponding kind of biomass residues during the corresponding month. All the raw data from analysis lab and the calculation process were verified by SGS assessors during the on site visit. In methodology ACM0006 version 04, the parameter NCV_k is based on dry biomass. However, through the site visit and interview with the laboratory analyzer, the

assessment team found the data collected from the onsite laboratory and reported in version 1.0 of the monitoring report is the Calorific Value of the biomass residue on wet basis. **CAR #7** is raised to require the PP to report the NCV of the biomass residue on dry basis as required by the methodology and the monitoring plan of the project.

In the final version of the monitoring report and the ER spreadsheet, measured monthly average NCV values of each kind of biomass residues in dry base have been reported i. All test records (/27/) during this monitoring period have been collected and verified by the assessment team. **CAR#7** is therefore closed by the assessment team.

As per the requirement presented in the revised monitoring plan, the assessment team checked the IPCC 2006 Guidelines for National Greenhouse Gas Inventories Volume 2 Energy Chapter Table 1.2 (/37/), the NCV values for biomass residues and the biomass residues NCV values published in the China Energy Statistical Yearbook (/38/).In comparison, no significant difference identified, the assessment team therefore considered that actual applied direct measured NCV values for ER calculation is acceptable.

3.4.5 AVD_y: Average return trip distance (from and to) between biomass fuel supply sites and the project site.

According to the approved revised monitoring plan, this parameter is obtained from the records provided by the PP.

Every time when biomass residues were transported into the project plant, the site operator manually input information on the distance into daily records of transportation and distance of each biomass supplier (/28/). The reported value of AVD_y of every month was the average of all the distances recorded for all the suppliers in the month. The weight was the number of truck trips for the transportation of biomass. Monthly data were summarized into monthly summary on number of truck trips and average distance. Distances in the electric map of biomass residues collection sites (/29/) and statistic of transport distance for the biomass collection sites (/30/) was used as cross references.

All the raw data relate to the average return trip distance has been collected by SGS assessors and the calculation process presented in monthly summary spreadsheet was walked through and found to be correct.

3.4.6 N_y: Number of truck trips for the transportation of biomass

According to the approved revised monitoring plan, this parameter is monitored by the operator of the dispatch centre for each truck when they arrive at the project plant.

When each truck arrived at the power plant, the operator input the number into daily records of transportation and distance of each biomass supplier (/28/). Monthly total number of truck trips was summarized into monthly records on number of truck trips and average distance. The actual implementation status corresponds with the revised monitoring plan.

Monthly summary records have been used for calculating N_y. Raw data have been checked and the calculation process was also verified. Reported data for parameter N_y presented in the MR version 1.0 is inconsistent with the assessment team verified results. CAR#9 is therefore raised by the assessment team. Relevant revision has been made in the final version of the monitoring report and the ER calculation spreadsheet and confirmed to be correct. CAR#9 has been closed.

As per the revised monitoring plan, measured results have been checked with the monthly weighting records for biomass residues (/25/) and the inventory table (/24/) for the combusted biomass residues.

3.4.7 $EF_{km,CO2}$: average CO_2 emission factor for transportation of biomass with trucks

Detailed information for this parameter presented in section 3.9.4

3.4.8 $FF_{project\ plant,i,y}$: Quantity of diesel combusted in the biomass residue fired power plant during the year y

In the registered PDD, it was indicated that the project may use some diesel oil for start-ups. Based on the design of the installed power generators, the assessment team identified that no diesel oil is needed for the generator start-up. Therefore, in the revised monitoring plan, this parameter has been defined as zero.

During the on site visit, the assessment team also confirmed that no diesel oil was used for start-up or electricity generation during this monitoring period.

3.4.9 $FF_{project\ site,i,y}$: Quantity of diesel combusted at the project site for other purposes that area attributable to the project activity during the year y.

According to the revised monitoring plan, this parameter shall be directly measured and calculated by the procurement department of power plant.

During the on site visit, the assessment team identified that the fossil fuel combusted at the project site for other purpose that are attributable to this project activity ($FF_{project\ site,i,y}$) mainly relate to the onsite grass-grasping vehicles. And $FF_{project\ site,i,y}$ has been measured by flow meter which is owned and operated by Gaotang Petro Station. The volume quantity of diesel has be continuously monitored and recorded, then multiplied by diesel density ρ_{diesel} (This is a default parameter, detailed information presented in section 3.9) to get the mass quantity of diesel for ER calculation. Measured records has been collected and summarized by the PP.

Monthly summary record for onsite diesel consumed (/34/) has been collected by the assessment team and cross-checked against the purchased invoice (/35/) of diesel. Raw data have been checked and the calculation process was also verified to be correct.

3.4.10 ρ_{diesel} :Density of diesel

Detailed information for this parameter presented in section 3.9.5

3.4.11 $EF_{CO2,FF,i}$ CO_2 Emission Factor for fossil fuel type i

Detailed information for this parameter presented in section 3.9.6

3.4.12 NCV_i : Net Calorific Value of fossil fuels combusted at the project site for other purposes that are attributable to the project activity during year y.

Detailed information for this parameter presented in section 3.9.7

3.4.13 NCV_k * $EF_{burning,\ CH4,k,y}$ CH_4 emission factor for uncontrolled burning of the biomass residue type k during the year y

Detailed information for this parameter presented in section 3.9.8

3.4.14 $EF_{CH4.BF}$: CH_4 methane emission factor for the combustion of biomass residues in the project plant

Detailed information for this parameter presented in section 3.9.9

3.4.15 $EC_{PJ,y}$ On-site electricity consumption attributable to the project activity during the year y (including the electricity consumed from the preparation of the biomass residue in all collection stations)

As per the revised monitoring plan, the on-site electricity consumption attributable to the project activity consists of two parts, one part is the electricity consumption at the project power plant, which is measured by the main meter (S/N 200306083C0123) installed at the substation of the grid company, the other part is the electricity consumption at the biomass collection stations, which is measured by seven meters installed at the biomass collection sites. The accuracy classes of the meters comply with relevant Chinese national/industrial standards and calibrated as per relevant national/industrial standards. Monitoring process for electricity consumption at the project power plant is as same as $EC_{PJ,y.}$ ETN and Electricity purchase invoices issued by the grid company have been used for cross check reference.

According to the schedule and arrangement of the power grid company, relevant people from the power distribution company are responsible to read the meters installed at collection stations. In the end of each month, formal electricity purchase invoice (/32/) will be issued by the power distribution company. Specific meter reading records (/31/) have also been provided. Relevant records has been collected by the PP and applied for ER calculation.

In MR version 1.0, the reported electricity consumption at the seven biomass residue collection site is estimated based on the 10 kWh/ton biomass residues. After revision, the actual measured results for the electricity consumption amount have been provided in MR Version 2.0.

Monthly summary records has been collected by the assessment team, purchase invoice has been applied as cross-check reference. After data comparison, conservative values between the measured results and purchase receipts have been applied for final ER calculation. This is accepted by assessment team since this is a conservative option. The calculation in the spreadsheet has been walked through and reported values in the final version of MR and ER calculation spreadsheet were verified to be correct.

3.4.16 Quantity of available biomass residues of type k in the region

Detailed information for this parameter presented in section 3.9.10

3.4.17 Quantity of biomass residues of type k that are utilized (e.g. for energy generation or as feedstock) in the defined geographical region

Detailed information for this parameter presented in section 3.9.11

3.5 Accuracy of Equipment

3.5.1 Electricity Meters

According to the national standard JJG596-1999(/54/), meters installed by the regional power distribution company at Huixin substation has been calibrated annually by Liao Cheng Power Research Institute , which is an accredited entity by Quality and Technical Supervision Bureau of Shandong (/41/). The calibration reports (/39/) and the accreditation certificate of the calibrating entity have been verified. The calibration results showed that the meter was eligible, with the period of validity covering this monitoring period under verification.

Detailed calibration information of main meter (/20/) is presented in the following table.

Electricity Meter	Accuracy	Calibration	
		Date of calibration	Calibration due on
Main Meter 200306083C0123	0.5	10/06/2007	09/06/2008
		23/03/2008	22/03/2009
		13/03/2009	12/03/2010
Accreditation Certificate of the accredited entity and Accreditation Cert. No.		Accreditation Certificate of Liao Cheng Power Supply Institute issued by Quality and Technical Supervision Bureau of Shandong province. Certificate No: (lu) Metro (2009)D016	

As per the RMP, electricity meters installed at the collection station have been calibrated periodically by Gaotang Power Supply Company, which is an accredited entity by Quality and Technical Supervision Bureau of Shandong (/42/). The calibration reports and the accreditation certificate of the calibrating entity have been verified. The calibration results showed that the meters were eligible, with the period of validity covering this monitoring period under verification.

As per information and reporting checklist version 2.0, the monitoring report shall contain information on calibration of monitoring instruments (frequency, relevant dates of calibration and validity) as specified by the monitoring methodology and the monitoring plan. CAR#13 is therefore raised considering the information of calibration frequency for seven meters installed on the collection stations are not included in the monitoring report version 3.1. The PP clarified that seven meters installed on the collection stations have been calibrated according to national standard JJG 596-1999 and relevant information has been provided in the MR version 4.0 dated 08/08/2012. Based on the clarification provided by the PP the assessment team

confirmed that the calibration frequency for seven meters installed at the collection stations is in line with national standards JJG 596-1999 and in compliance with the revised monitoring plan. Three meters are belonging to the induction watt-hour meter, the calibration frequency is once per three years. Four meters are belonging to the Mechanical electric energy meter; the calibration frequency is once per five year. Specific clarification for the calibration frequency has also been provided by the calibration institute (/55/) and checked by the assessment team.

Information presented in the updated MR has been confirmed to be correct. CAR#13 is therefore closed by the assessment team.

Detailed calibration information of meters (/40/) is presented in the following table.

Electricity Meter	Accuracy	Calibration	
		Date of calibration	Calibration due on
#1 Electricity Meter Qingping collection station 220227	2.0	20/09/2006	19/09/2011
#2 Electricity Meter Fengzhuang collection station 015882	2.0	30/09/2006	29/09/2009
#3 Electricity Meter Wangxianzhuang collection station 483577	2.0	25/11/2006	24/11/2011
#4 Electricity Meter Dongzhuang collection station 483477	2.0	05/11/2007	04/11/2012
#5 Electricity Meter Tianzhai collection station 220265	2.0	21/08/2006	20/08/2009
#6 Electricity Meter Liusi collection station 220220	2.0	08/10/2006	07/10/2009
#7 Electricity meter Liangcun collection station 0596049	2.0	05/12/2007	04/12/2012
Accreditation Certificate of the accredited entity and Accreditation Cert. No.		Accreditation Certificate of Gaotang Power Supply Company issued by Quality and Technical Supervision Bureau of Shandong province. Certificate No: (lu) Metro (2006)D065	

3.5.2 The electronic truck scale

Two installed electronic truck scales (Type: SCS-30t; S/N: 20061206 and 20070701 accuracy level: III) were checked visually on site by the verification team. The electronic truck scales have been calibrated twice a year as per Chinese national standard JJG 539-1997 by Quality and Technology Supervision Inspection Institute of Liaocheng city (/43/) which is accredited by Quality and Technology Supervision Bureau of Shandong Province (/44/). Calibration details valid for this monitoring period verified by SGS assessors are as follows:

Electronic truck scale	Accuracy	Calibration Information	
		Date of calibration	Calibration due on

S/N: 20061206	III	28/09/2007	27/03/2008
		27/03/2008	26/09/2008
		25/09/2008	24/03/2009
		22/03/2009	21/09/2009
S/N 20070701	III	28/09/2007	27/03/2008
		27/03/2008	26/09/2008
		25/09/2008	24/03/2009
		22/03/2009	21/09/2009
Accreditation Certificate of the accredited entity and Cert. No.		Accreditation Certificate of Quality and Technology Supervision Inspection Institute of Liaocheng city issued by Quality and Technology Supervision Bureau of Shandong Province Certificate No (Lu) Metro (2002) 006	

3.5.3 The Calorimeter

The calorimeter (S/N: 1406128; Accuracy level: Qualified) was checked by the assessment team. The calorimeter was calibrated on 10/01/2008, 09/01/2009 by Quality and Technology Supervision Inspection Institute of Liaocheng city, which is authorised by Quality and Technology Supervision Bureau of Shandong Province. The calibration certificates of the calorimeter (/45/) and accreditation certificate of the calibrating entity (/46/) valid during this monitoring period have been verified by SGS assessors. Calibration for calorimeter has been carried out once per year based on national standard JJG672-2001. The calibration certificate indicated that the calorimeter was checked to be eligible.

3.5.4 The Moisture Analyzer

The moisture analyzer (S/N: 3506073; Accuracy level: 0.01) was checked by the assessment team. The calorimeter was calibrated on 10/02/2008, 07/02/2009 by Quality and Technology Supervision Inspection Institute of Liaocheng city, which is authorised by Quality and Technology Supervision Bureau of Shandong Province. The calibration certificates of the moisture analyzer (/47/) and accreditation certificate of the calibrating entity (/48/) valid during this monitoring period have been verified by SGS assessors. Calibration for moisture analyzer has been carried out once per year based on national standard JJG1036-2008. The calibration certificate indicated that the moisture analyzer was checked to be eligible.

3.5.5 The Flow Meter

Calibration records of the flow meter (S/N 283992690, Accuracy level: qualified) was checked by the assessment team. The flow meter was calibrated on 28/07/2007 by Quality and Technology inspection institute of Gaotang city, which is authorised by Quality and Technology Supervision Bureau of Shandong Province. The calibration certificates of the flow meter (/49/) and accreditation certificate of the calibrating entity (/50/) valid during this monitoring period have been verified by SGS assessors. Calibration for flow meter has been carried out once per two year based on national standard JJG443-2006. The calibration certificate indicated that the flow meter was checked to be eligible.

3.6 Accuracy of Emission Reduction Calculations

According to the VVM version 01.2 Para 208 – 209, the accuracy of emission reduction calculations has been verified by the assessment team. In accordance with the approved revised monitoring plan, a complete set of data for the specified monitoring period is available. Monitored data of the parameters reported in the final version of monitoring report have been cross checked with relevant cross check reference (like electricity sales receipts, biomass residues purchase invoices, daily operation logbook, etc.). Final version of ER calculation spreadsheet has been walked through and found to be correct (/5/). Appropriate methods and formulae for calculating baseline and project emissions have been followed. During the verification stage, fixed emission factors and default values have been applied correctly. CAR #6 and CAR#7 and CAR#9 for

accuracy of emission reduction calculations, relevant revision has been made and confirmed to be correct. CAR#6 and CAR#7 and CAR#9 are closed.

The details of the reported and the verified values for all parameters are listed in section 4, "Calculation of Emission Reductions".

3.7 Quality of Evidence to Determine Emission Reductions

Critical parameters used for the determination of the Emission Reductions are discussed in section 3.4 above. All the data recorded is in compliance with the monitoring report.

3.8 Management System and Quality Assurance

Management system and quality assurance procedures have been stipulated in the CDM Manual (/14/) and internal operation procedure and have been implemented. Emergency plan and staff training plan are in place, although no emergency situation happened during this monitoring period. The staffs are well trained and qualified (/15/). These have been verified during on-site visit and document review. Therefore, the assessment team confirms that the management system of the CDM project is in place; with the responsibilities properly identified and in place, and that QA/QC procedures well implemented.

In accordance with paragraphs 205 of the VVM Version 01.2, the assessment team confirms that responsibilities and authorities for monitoring and reporting are in accordance with what is stated in the monitoring plan in the registered PDD.

3.9 Data from External Sources

3.9.1 GWP_{CH4}: Global Warming Potential of CH_4

As per the approved revised PDD and ACM0006 version 04, IPCC default value of 21 TCO_2E/TCH_4 has been adopted in the Monitoring Report.

3.9.2 $EF_{electricity,y}$: CO_2 emission factor for the electricity displaced due to the project activity during the year y

According to the description about the calculation of the baseline emission factor in section B.6 of the approved revised PDD, the emission factor of the electricity displaced ($EF_{electricity, y}$) is determined ex-ante as 0.975 TCO_2e/MWh and fixed for the first crediting period.

The emission factor of the electricity displaced, 0.975 TCO_2e/MWh was correctly adopted in the Monitoring Report.

3.9.3 $EF_{,grid,y}$: CO_2 emission factor for grid electricity during the year y

According to the description about the calculation of the project emission in section B.6 of the approved revised PDD, the emission factor of the CO_2 emission factor for grid electricity ($EF_{,grid,y}$) is determined ex-ante as 0.975 TCO_2e/MWh and fixed for the first crediting period.

The emission factor of the grid electricity, 0.975 TCO_2e/MWh was correctly adopted in the Monitoring Report.

3.9.4 $EF_{km,CO2}$: average CO_2 emission factor for transportation of biomass with trucks

As per the approved revised monitoring plan, it is impossible for the PP to conduct sample measurement and the reliable national default value is not available. So the default values from the IPCC manual (/37/) will be used.

As the PP could not get this data from the subcontractor of truck rental, the carbon emission factor for large heavy load transportation truck as 0.001011 TCO_2/km (IPCC default value) has been adopted in the Monitoring Report.

Through document review, the assessment team identified that in section E.2 of MR version 3.1, formula (5), it is reported that the CO2 emissions factor from fuel used for transportation is fixed in PDD as 1.011kgCO2/km. The assessment team considered that this description is inconsistent with the approved revised monitoring plan. CAR#14 is therefore raised by the assessment team. Relevant revision has been made in the final version of MR to ensure the information consistency. CAR#14 is therefore closed by the assessment team.

3.9.5 ρ_{diesel} :Density of diesel

As per the revised monitoring plan, this parameter will be used to calculate mass quantity of diesel combusted at project site ($FF_{project,site,i,y}$) for each monitoring period. Direct measured ρ_{diesel} data from diesel supplier side is unavailable. Therefore, PP chooses to use the default value from national standard.

The conservative value 0.86 kg/liter from national standard GB/T19147-2003"Automobile Diesel Fuels"(/36/), has been applied in the monitoring report and is verified to be appropriate..

3.9.6 $EF_{CO2,FF,i}$ CO_2 Emission Factor for fossil fuel type i

As per the approved revised PDD, IPCC default value of 0.0741 TCO_2e/GJ has been adopted in the Monitoring Report and is verified to be the same as the one from the latest version of IPCC.

3.9.7 NCV_i : Net Calorific Value of fossil fuels combusted at the project site for other purposes that are attributable to the project activity during year y.

As per the approved revised PDD, the default value of Net Calorific Value of fossil fuels combusted at the project site for other purposes that are attributable to the project activity during the year y as 42.652 GJ/ton (China Energy Statistical Yearbook)(/38/) was adopted in the Monitoring Report. After cross-checking the data presented in the IPCC 2006(/37/), no significant difference were identified; the assessment team therefore considered that the applied NCV_i is acceptable.

3.9.8 NCV_k * $EF_{burning,\ CH4,k,y}$ CH_4 emission factor for uncontrolled burning of the biomass residue type k during the year y

According to the applied methodology ACM0006 Version 04, revised approved MP applied referenced default values. Recommended value in applied methodology is 0.0027 t CH_4 per ton of biomass as default value for the product of NCV_k and $EF_{burning,CH4,k,y.}$ The uncertainty can be deemed to be greater than 100%, resulting in a conservativeness factor of 0.73. Therefore, the final emission factor 0.001971 tCH4/t biomass should be used.

3.9.9 $EF_{CH4.BF}$: CH_4 methane emission factor for the combustion of biomass residues in the project plant

In the registered PDD and ACM0006 ver04, CH_4 emission from combustion of biomass residues for electricity is included in the project boundary. The formula used to calculate $PE_{Biomass,CH4,y}$ (methane emissions from combustion of biomass residues during the year y) is:

$$PE_{biomass,CH4,y} = EF_{CH4,BF} * \sum_{k} BF_{,k,y} * NCV_k$$

The $EF_{CH4,BF}$ (CH_4 emission factor for the combustion of biomass residues in the project plant) is a parameter that needs to be monitored according to the methodology applied. Through document review, the assessment team identified that $EF_{CH4,BF}$ is not included in the registered monitoring plan.
CAR #3 is raised requesting the PP to revise the monitoring plan. Relevant revision has been made by the PP and revised monitoring plan has been approved by EB. **CAR#3** is therefore closed by the assessment team.

As per the approved revised PDD and the IPCC default value provided in table 3 of ACM0006 version 04, the CH_4 emission factor of combustion of biomass in agriculture is 0.03 TCH_4/TJ. Considering a conservativeness factor of 1.37, the CH_4 emission factor as 0.0000411 TCH4/GJ was adopted in this monitoring period and was verified to be same with the one from latest version of IPCC

3.9.10 Quantity of available biomass residues of type k in the region

According to the registered PDD and ACM0006 ver04, the project chooses approach L2 to assess leakage effects. During the monitoring period, the PP need to demonstrate that the quantity of available biomass residue of biomass in the region is at least 25% larger than quantity of biomass residues of type k that are utilized.
Two parameters need to be monitored during crediting period.

1. “Quantity of biomass residues of type k that are utilized in the defined geographical region”
2. “Quantity of available biomass residues of type K in the region”

In the PDD MP page 39, monitoring parameters are
1. “Quantity of cotton stalks that are utilized in the defined geographical region.”
2. “Quantity of cotton stalks in the region.”

The monitoring parameters in the monitoring plan are not in compliance with the methodology requirement. During the onsite visit, the assessment team also found the biomass sources are cotton straw, wood and cortices and wheat brain. Only collecting monitoring data for cotton stalks is in line with the actual status. Relevant revision needs to be made in the registered PDD. **CAR#5** was therefore raised. In the revised PDD and monitoring plan, Parameters description has been revised to contain all types of biomass residue. **CAR#5** is therefore closed by the assessment team.

During the first monitoring period, the biomass residues were collected from Gaotang City, Xiajin City, Guanxian City and Linqing City, Pingyuan City, Wucheng City, Yucheng City, Chiping City. The maximal radius for biomass collection was 50km, which was between 20km and 200km required by ACM0006 version 04. The radius has been verified by SGS assessors using an electronic map (/29/).

As per the approved revised monitoring plan, quantity of available biomass residues of type k in the region is obtained from official local data since national statistics is not available.

There was a biomass residues statistic survey conduct by eight local authorities, the Statistic Bureau of eight biomass collection sites (/33/) which are official and authoritative survey departments for local agricultural data. Amount of all types of available biomass residues in the region, and other utilizations in the area (not including this project) were generated from public survey result. Related data from the statistic reports have been provided to and checked by SGS assessors.

The reported values of quantity of available biomass residues of type k in the region have been verified to be in compliance with the information indicated in the statistic reports.

3.9.11 Quantity of biomass residues of type k that are utilized (e.g. for energy generation or as feedstock) in the defined geographical region

The revised monitoring plan has been approved by the PP. Refer to CAR#5, in the revised monitoring plan parameter description has been revised to contain all types of biomass residues.

In the actual implementation stage, the biomass residues were collected from Gaotang City, Xiajin City, Guanxian City and Linqing City, Pingyuan City, Wucheng City, Yucheng City, Chiping City. The maximal radius for biomass collection was 50km, which was between 20km and 200km required by ACM0006 version 04. The radius has been verified by SGS assessors using an electronic map (/29/).

As per the revised monitoring plan, quantity of available biomass residues of type k in the region is obtained from official local data since national statistics is not available.

The evidence “regional biomass source survey report” provided by the PP clearly shows the original data of available biomass in these eight regions in which the biomass was collected. The quantity of biomass residues that was available in surplus in these eight regions during this monitoring period has been verified by SGS assessors. Furthermore, it was demonstrated in the Monitoring Report that three kinds of biomass residues available in the region were 25% more than that utilised in the region, including the project activity. Therefore, SGS assessors were able to confirm that an abundant surplus of biomass in the region was demonstrated and the leakage of the project was zero during this monitoring period.

4. Calculation of Emission Reductions

Table 1 Reported and Verified Data for Emission Reductions due to displacement of electricity ($ER_{electricity,y}$) in monitoring period from 20/03/2008 to 25/03/2009 Baseline Emissions

Parameter	Reported Value the MR version 1.0	Verified Value in final version of MR
EG_y (MWh)	180,160.20	179,818.91
$EF_{electricity,y}$ (tCO_2e/MWh)	0.975	0.975
$ER_{electricity,y}$ (tCO_2e)	175,651	175,316

$ER_{electricity,y} = EG_y * EF_{electricity,y}$

$ER_{electricity,y}$	is the emission reductions due to displacement of electricity during the year y (tCO_2/yr)
EG_y	is the net quantity of electricity delivered to grid in year y
$EF_{electricity,y}$	is the CO_2 emission factor for the electricity displaced due to the project activity during the year y (tCO_2/ MWh).

Table 2 Reported and Verified Data for Baseline emissions due to natural decay or burning of anthropogenic sources of biomass residues ($BE_{biomass,y}$) in monitoring period from 20/03/2008 to 25/03/2009, Baseline Emissions

Monitoring Parameter $BF_{k,y}$ (Ton) in MP1

Period	Reported Value the MR version 1.0			Verified Value in final version of MR		
	BF_1	BF_2	BF_3	BF_1	BF_2	BF_3
20/03/2008-29/03/2008	3,373.21	4,143.11	225.16	2,612.34	2,963.33	182.75
30/03/2008-28/04/2008	3,726.1	11,663.69	118.35	2,871.62	8,332.19	94.52
29/04/2008-29/05/2008	3,750.37	9,907.54	745.13	2,579.74	6,634.39	483.27
30/05/2008-28/06/2008	5,006.38	5,547.47	439.53	3,424.12	3,324.71	279.40
29/06/2008-29/07/2008	5,768.64	6,800.46	43.82	4,462.23	5,180.07	31.42
30/07/2008-28/08/2008	5,273.95	10,521.31	546.34	3,801.54	8,001.52	398.30
29/08/2008-26/09/2008	349.3	11,868.75	2516.7	258.10	7,716.96	1,759.18
27/09/2008-25/10/2008	663.95	6,197.91	2,322.76	420.69	3,631.79	1,691.98
26/10/2008-25/11/2008	2,984.75	7,433.64	438.04	2,421.59	5,050.75	382.23
26/11/2008-25/12/2008	16,730.66	7,785.54	2,815.26	14,450.61	4,943.57	2,412.74
26/12/2008-22/01/2009	18,452.54	,8090.04	1,460.56	14,780.19	5,640.99	1,222.98
23/01/2009-22/02/2009	7,707.18	3,124.07	2,483.64	6,385.51	2,332.02	2,009.93
23/02/2009-25/03/2009	9,647.39	36,976.48	1,253.78	7,543.62	28,150.28	979.45
total	83,434.42	130,060.01	15,409.07	66,011.91	91,902.57	11,928.17

BF_1: cotton straw, BF_2: wood residues, BF_3: wheat bran

Monitoring Parameter: Moisture content of the biomass residues (%) in MP1

Period	Reported Value the MR version 1.0			Verified Value in final version of MR		
	M_1	M_2	M_3	M_1	M_2	M_3
20/03/2008-29/03/2008	No Data	No Data	No Data	22.56	28.48	18.84
30/03/2008-28/04/2008	No Data	No Data	No Data	22.93	28.56	20.14
29/04/2008-29/05/2008	No Data	No Data	No Data	31.21	33.04	35.14
30/05/2008-28/06/2008	No Data	No Data	No Data	31.60	40.07	36.43
29/06/2008-29/07/2008	No Data	No Data	No Data	22.65	23.83	28.30
30/07/2008-28/08/2008	No Data	No Data	No Data	27.92	23.95	27.10
29/08/2008-26/09/2008	No Data	No Data	No Data	26.11	34.98	30.10
27/09/2008-25/10/2008	No Data	No Data	No Data	36.64	41.40	27.16
26/10/2008-25/11/2008	No Data	No Data	No Data	18.87	32.06	12.74
26/11/2008-25/12/2008	No Data	No Data	No Data	13.63	36.50	14.30
26/12/2008-22/01/2009	No Data	No Data	No Data	19.90	30.27	16.27
23/01/2009-22/02/2009	No Data	No Data	No Data	17.15	25.35	19.07
23/02/2009-25/03/2009	No Data	No Data	No Data	21.81	23.87	21.88

M_1: cotton straw, M_2: wood residues, M_3: wheat bran

Parameter	Reported Value the MR version 1.0	Verified Value in final version of MR
Total BF_1 (Ton)	83,434.42 (Wet Base)	66,011.91 (Dry Base)
Total BF_2 (Ton)	130,060.0 (Wet Base)	91,902.57 (Dry Base)
Total BF_3 (Ton)	15,409.07 (Wet Base)	11,928.17(Dry Base)
NCV_k*$EF_{burning,CH4,k,y}$ (tCH_4/ton)	N/A	0.001971
GWP_{CH4} (tCO_2/tCH_4)	21	21
$BE_{biomass,y}$ (tCO_2e)	9,473	7,030

BF_1: cotton straw, BF_2: wood residues, BF_3: wheat bran （Note: Final reported quantity of biomass residues has been adjust for the moisture content）

$$BE_{biomass,y} = GWP_{CH4} * \sum_{k} BF_{PJ,k,y} * NCV_k * EF_{burning,CH4,k,y}$$

$BE_{biomass,y}$	is baseline emissions due to natural decay or burning of anthropogenic sources of biomass residues during the year Y（tCO_2e/year）
GWP_{CH4}	is the Global Warning Potential for methane valid for the relevant commitment period which is determined in the PDD as $21tCO_2/tCH_4$
NCV_k*$EF_{burning,CH4,k,y}$	is the CH_4 emission factor for uncontrolled buring of the biomass residues type k during the year y (Note: PPs used 0.0027 TCH_4/ton biomass for product of $EF_{burning,CH4,k,y}$*NCV_k for conservation and the corresponding conservativeness factor is 0.73.
$BF_{PJ,k,y}$ (BF_1+BF_2+BF_3)	is the incremental quantity of biomass residue type k used as fuel in the project plant during the year y in tons

Table 3 Reported and Verified Data for Carbon dioxide emissions from combustion of fossil fuels for transportation of biomass residues to the project plant (PET_y) in monitoring period from 20/03/2008 to 25/03/2009, Project Emissions

Monitoring Parameter: Reported and Verified Data of N_y (Number) in MP1

Period	Reported Value the MR version 1.0	Verified Value in final version of MR
20/03/2008-29/03/2008	913	913
30/03/2008-28/04/2008	1,609	1,609
29/04/2008-29/05/2008	1,935	1,935
30/05/2008-28/06/2008	1,809	1,809
29/06/2008-29/07/2008	2,108	2,108
30/07/2008-28/08/2008	2,193	2,193
29/08/2008-26/09/2008	1,590	1,590
27/09/2008-25/10/2008	1,124	1,124
26/10/2008-25/11/2008	1,628	1,628
26/11/2008-25/12/2008	3,996	3,996
26/12/2008-22/01/2009	3,811	3,815
23/01/2009-22/02/2009	1,898	1,898
23/02/2009-25/03/2009	4,102	4,102

Monitoring Parameter: Reported and Verified Data of AVD_y(km) in MP1

Period	Reported Value in the MR 1.0	Verified Value in final version of MR
20/03/2008-29/03/2008	58.17	58.17
30/03/2008-28/04/2008	60.90	60.90
29/04/2008-29/05/2008	57.78	57.78
30/05/2008-28/06/2008	55.25	55.25
29/06/2008-29/07/2008	61.26	61.26
30/07/2008-28/08/2008	53.06	53.06
29/08/2008-26/09/2008	36.48	36.48
27/09/2008-25/10/2008	33.95	33.95
26/10/2008-25/11/2008	44.71	44.71
26/11/2008-25/12/2008	41.79	41.79
26/12/2008-22/01/2009	47.10	47.10
23/01/2009-22/02/2009	38.61	38.61
23/02/2009-25/03/2009	48.29	48.29

Parameter	Reported Value the MR version 01	Verified Value in final version of MR
$EF_{km,CO2,y}$ (tCO_2e/km)	0.001011	0.001011
PET_y (tCO_2e)	1,418	1,418

$PET_y = N_y * AVD_y * EF_{km,CO2,}$

PET_y	are CO_2 missions during the year y due to transport of biomass residues to the project plant（tCO_2e/yr）

N_y	is the number of truck trips during the year y
AVD_y	is the average round trip distance（from and to）between the biomass residue fuel supply sites and the site of the project plant during the year y (km)
$EF_{km,CO2,y}$	is the average CO_2 emission factor for the trucks measured during the year y (tCO_2e/km)

Table 4 Reported and Verified Data for Carbon dioxide emissions from fossil fuel consumption in the power plant ($PEFF_y$) in monitoring period from 20/03/2008 to 25/03/2009, Project Emissions

Parameter	Reported Value the MR version 1.0	Verified Value in final version of MR
$FF_{project,plant,i,y}$ (Ton)	0	0
Measured volume flow for diesel combusted at the project site (L)	N/A	112,353
ρ_{diesel} (kg/liter)	N/A	0.86
$FF_{project,site,i,y}$ (Ton)	96.62	96.62
NCV_i (GJ/ton)	42.652	42.652
$EF_{CO2,FF,i}$ (tCO_2/GJ.)	0.0741	0.0741
$PEFF_y$ (tCO_2e)	312	312

$$PEFF_y = \sum_i (FF_{proect,\ plant,i,\ y} + FF_{project,\ site,i,\ y}) * NCV_i * EF_{CO2,\ FF,\ i}$$

$PEFF_y$	are CO_2 emissions from on-site consumption of fossil fuels in the biomass power plant during the year y in tons of CO_2 equivalents,
$FF_{project,plant,i,y}$	is the quantity of fossil fuel type i combusted in the project plant during the year y (ton/year), which is 0 in this project,
$FF_{project,site,i,y}$	is the quantity of fossil fuel type i combusted at the project site during the year y (ton/year),
NCV_i	is the Net calorific value of diesel（GJ/ton）, which is 42.652 GJ/ton,
$EF_{CO2,FF,i}$	is CO2 emission factor for the diesel fuel type I（tCO_2/GJ）, which is 0.0741TCO_2/GJ.

Table 5 Reported and Verified Data for Carbon dioxide emissions from electricity consumption ($PE_{EC,y}$) in monitoring period from 20/03/2008 to 25/03/2009, Project Emissions

Parameter	Reported Value the MR version 1.0	Verified Value in final version of MR
$EC_{PJ,y}$ (MWh)	2851.355	919.738
$EF_{,grid,y}$ (TCO_2e/MWh)	0.975	0.975
$PE_{EC,y}$ (TCO_2e)	2,779	898

$PE_{EC,y} = EC_{PJ,y} * EF_{,grid,y}$

$PE_{EC,y}$	are CO_2 emissions from on-site electricity consumption attributable to the project activity（TCO_2e/year）.

$EC_{PJ,y}$	is the on-site electricity attributable to the project activity during the year y（MWh）
$EF_{grid,y}$	is the CO_2 emission factor for grid electricity during the year Y（TCO_2/ MWh）

Table 6 Reported and Verified Data for Methane emissions from combustion of biomass residues ($PE_{biomass,CH4,y}$) in monitoring period from 20/03/2008 to 25/03/2009, Project Emissions

Monitoring Parameter: Reported and Verified Data of NCV_k(TJ/t)

Period	Reported Value in the MR version 1.0			Verified Value in final version of MR		
	NCV_1	NCV_2	NCV_3	NCV_1	NCV_2	NCV_3
20/03/2008-29/03/2008	0.01318	0.01229	0.01275	0.01402	0.01449	0.01420
30/03/2008-28/04/2008	0.01229	0.01125	0.01176	0.01406	0.01296	0.01394
29/04/2008-29/05/2008	0.01177	0.01241	0.00972	0.01355	0.01423	0.01211
30/05/2008-28/06/2008	0.01192	0.01160	0.01120	0.01377	0.01353	0.01206
29/06/2008-29/07/2008	0.01063	0.01191	0.01312	0.01233	0.01373	0.01482
30/07/2008-28/08/2008	0.01086	0.01139	0.01238	0.01242	0.01287	0.01406
29/08/2008-26/09/2008	0.01186	0.01243	0.01358	0.01354	0.01429	0.01533
27/09/2008-25/10/2008	0.01165	0.01153	0.01176	0.01343	0.01354	0.01344
26/10/2008-25/11/2008	0.01155	0.01199	0.01090	0.01429	0.01398	0.01225
26/11/2008-25/12/2008	0.01174	0.00939	0.00827	0.01333	0.01167	0.00904
26/12/2008-22/01/2009	0.00915	0.00912	0.00734	0.01292	0.01312	0.01001
23/01/2009-22/02/2009	0.01185	0.01053	0.00734	0.01619	0.01541	0.00991
23/02/2009-25/03/2009	0.01257	0.01091	0.00824	0.01483	0.01710	0.00981
Average	N/A	N/A	N/A	0.01369	0.01462	0.01150

NCV_1= Cotton Straw, NCV_2= Wood Residues, NCV_3= Wheat Bran

Parameter	Reported Value the MR version 1.0	Verified Value in final version of MR
BF_1 (Ton) (Wet Base)	83,434.42	83,434.42
BF_2 (Ton) (Wet Base)	130,060.01	130,060.01
BF_3 (Ton) (Wet Base)	15,409.07	15,409.07
BF_1 (Ton) (Dry Base)	N/A	66,011.91
BF_2 (Ton) (Dry Base)	N/A	91,902.57
BF_3 (Ton) (Dry Base)	N/A	11,928.17
$EF_{CH4,BF}$ (Tch_4/TJ)	0.0000411	0.0000411
$PE_{biomass,CH4,y}$ (Tco_2e)	112	105

$$PE_{biomass,CH4,y} = EF_{CH4,BF} * \sum_{k} BF_{k,y} * NCV_k$$

$PE_{biomass,CH4,y}$	$_y$ are the project emissions from biomass controlled burning（Tco_2e/year）
$BF_{k,y}$	is the quantity of the biomass residues used as fuel in the project plant during the year y in tons
NCV_k	is the net calorific value of the biomass residues type k in GJ per ton
$EF_{CH_4,BF}$	is the CH_4 emission factor for controlled burning of the biomass residues in Tch_4/TJ

Table 6 Reported and Verified Data for Leakage

(L_y) in monitoring period from 20/03/2008 to 25/03/2009, Leakage Calculation

Parameter	Reported Value the MR version 1.0	Verified Value in final version of MR
$L_y(Tco_2e)$	0	0

Reported and Verified Data of Quantity of available biomass residues of type k in the region for MP1

Biomass Types	Reported Value the MR version 1.0 (t)	Verified Value in final version of MR (t)
Cotton Straw	966,614	966,614
Wood residues	1,226,463	1,226,463
Wheat bran	90,450	90,450

Reported and Verified Data of Quantity of biomass residues of type k that are utilized (e.g. for energy generation or as feedstock) for MP1

Biomass Types	Reported Value the MR version 1.0 (t)	Verified Value in final version of MR (t)
Cotton Straw	287,504.42	287,504.42
Wood residues	446,210.01	446,210.01
Wheat bran	28,709.07	28,709.07

Table 7 Reported and verified Data of BE_y, PE_y and L_y

Item	Reported Value in the MR version 1.0	Verified Value in final version of MR
$ER_{electricity,y}$ (Tco_2e)	175,651	175,316
$BE_{biomass,y}$ (Tco_2e)	9,473	7,030
PET_y (Tco_2e)	1,418	1,418
$PEFF_y$ (Tco_2e)	312	312
$PE_{EC,y}$ (Tco_2e)	2,779	898
$PE_{biomass,CH4,y}$ (Tco_2e)	112	105
L_y (Tco_2e)	0	0

Emission reductions calculation:

Baseline emissions (BE_y) for the monitoring period is

$BE_y = ER_{electricity,\ y} + BE_{biomass,\ y}$

$= 175{,}316TCO_2e + 7{,}030\ TCO_2e$

$= 182{,}346TCO_2e.$

Project emissions (PE_y) is

$PE_y = PET_y + PEFF_y + PE_{EC,y} + GWP_{CH4} * PE_{biomass,\ CH4,\ y}$

= 1,418TCO_2e + 312 TCO_2e +898 TCO_2e+ 21 TCO_2E/TCH_4 * 105 TCO_2e

= 4,833 TCO_2e

It has been demonstrated that there is an abundant surplus of the biomass in the region of the project activity which is not utilized during this monitoring period. So the Leakage (L_y) of the project activity during this monitoring period is 0.

According to the registered PDD, Emission Reductions (ER_y) is calculated as follows:

$ER_y = ER_{electricity, y} + BE_{biomass, y} – PE_y – L_y$

= 175,316TCO_2e + 7,030 TCO_2e – 4,833 TCO_2e – 0 TCO_2e

= 177,513TCO_2e

Based on the EB66 meeting report Para 77, the EB agreed to accept the changes for the PDD and allow subsequent requests for issuance under the condition that the annual amount of CERs to be issued to the project activity shall be capped at the average annual emissions reductions estimated in the original registered PDD. Therefore, the final requested ER in this monitoring period is 143,007 tCO_2e.

5. Recommendations for Changes in the Monitoring Plan

No more recommendation for changes in the approved revised monitoring plan was made during this 1st periodic verification.

6. Overview of Results

Assessment Against the Provisions of Decision 17/CP.7:

Is the project documentation in accordance with the requirements of the registered PDD and relevant provision of decision 17/CP.7, EB decisions and guidance and the COP/MOP?

Yes. The results of the compliance assessment are recorded in the verification checklist which is used as an internal report only.

Have on-site inspections been performed that may comprise, inter alia, a review of performance records, interviews with project participants and local stakeholders, collection of measurements, observations of established practices and testing of the accuracy of monitoring equipment?

Yes. All members of the assessment team visited the site and undertook interviews, collected data, audited the implementation of procedures, checked calibration certificates and checked data, inter alia.

The results of the site visit are recorded in the verification checklist which is used as an internal report only.

The evidences have been checked and collected. The revised monitoring report is attached with this verification report.

Has data from additional sources been used? If yes, please detail the source and significance.

Yes, CO_2 emission factor for the electricity displaced due to the project activity during the year y ($EF_{electricity,y}$) 0.975TCO$_2$e/MWh and CO_2 emission factor for grid electricity during the year y ($EF_{,grid,y}$) were ex-ante determined using external sources at validation stage and fixed for the first crediting period. The significance is high and the risk is deemed low as it is fixed for this crediting period as per registered PDD;

The data of quantity of available biomass residues in the region and quantity of biomass residues of type k that are utilised in the defined geographical region were obtained from local statistic institutes. The significance is low and the risk is deemed low as these data have been collected by local authorities*;*

*$EF_{km,\ CO2}$, EF_{CH4},$EF_{co2,FF,I}$, NCV_k*$EF_{burning,CH4,k,y}$ GWP_{CH4}, $EF_{CH4,BF,}$ adopted default values from IPCC. NCV_i is default value from Chinese Energy Statistical Yearbook. Pdiese is default value from national standard GB/T19147-2003. The significance is high and the risk is deemed low as it is fixed for this crediting period as per registered PDD;*

Detailed information has been provided in Section 3.9.

Please review the monitoring results and verify that the monitoring methodologies for the estimation of reductions in anthropogenic emissions by sources have been applied correctly and their documentation is complete and transparent.

Yes. The monitoring methodology has been correctly applied and the monitoring report and supporting references are complete and transparent.

Have any recommendations for changes to the monitoring methodology for any future crediting period been issued to the project participant?

No.

Determine the reductions in anthropogenic emissions by sources of greenhouse gases that would not have occurred in the absence of the CDM project activity, based on the data and information using calculation procedures consistent with those contained in the registered project design document and the monitoring plan.

The data used in anthropogenic emission reduction calculation is consistent with those contained in the registered PDD and monitoring plan. The emission reduction was 183,854 tCO_2e for the period 20/03/2008 to 25/03/2009 as per the estimation made in the revised PDD. The actual emission reduction has been verified as 177,513 tCO_2e for the same period. However, based on the EB66 meeting report Para 77, the EB agreed to accept the changes for the PDD and allow subsequent requests for issuance under the condition that the annual amount of CERs to be issued to the project activity shall be capped at the average annual emissions reductions estimated in the original registered PDD. Therefore, the final ER to be claimed in this monitoring period is 143,007 tCO2e. Please refer to section 3.1 for details.

Identify and inform the project participants of any concerns related to the conformity of the actual project activity and its operation with the registered project design document. Project participants shall address the concerns and supply relevant additional information.

No such non conformity of the actual project activity and its operation with the registered project design document has been observed.

Post monitoring report on UNFCCC website

Yes, the monitoring report is available at ref. 1375 *on UNFCCC website*

http://cdm.unfccc.int/Projects/DB/TUEV-SUED1191857086.36/view

7. Verification and Certification Statement

SGS United Kingdom Ltd has been contracted by EDF Trading Limited to perform the verification of the emission reductions reported for the CDM project Shandong Gaotang 30MW Biomass Power Generation Project and UNFCCC Reference Number 1375 in the period from 20/03/2008 to 25/03/2009.

The verification is based on the validated and registered project design document and the monitoring report for this project. Verification is performed in accordance with section I of Decision 3/CMP.1, and relevant decisions of the CDM EB and CoP/MoP. The scope of this engagement covers the verification and certification of greenhouse gas emission reductions generated by the above project during the above mentioned period, as reported in Monitoring Report of Shandong Gaotang 30MW Biomass Power Generation Project, Version 4.0 dated 08/08/2012.

The management of the EDF Trading Limited is responsible for the preparation, calculation and determination of the GHG emissions data and the reported GHG emissions reductions on the basis set out within the project Monitoring Report Version 4.0 dated 08/08/2012. The development and maintenance of records and reporting procedures are in accordance with the monitoring report.

It is our responsibility to express an independent GHG verification opinion on the GHG emissions and on the calculation of GHG emission reductions from the project for the period from 20/03/2008 to 25/03/2009 based on the reported emission reductions in the Monitoring Report Version 4.0 dated 08/08/2012 for the same period.

Based on an understanding of the risks associated with reporting GHG emissions data and the controls in place to mitigate these, SGS planned and performed our work to obtain the information and explanations that we considered necessary to provide sufficient evidence for us to give reasonable assurance that this reported amount of GHG emission reductions for the period is fairly stated.

SGS confirms that the project is implemented as described in the validated and registered project design documents. Based on the information we have seen and evaluated, we confirm the following:

Project Title:	Shandong Gaotang 30MW Biomass Power Generation Project
UNFCCC Reference Number:	1375
Revised PDD and Approved used for Verification:	PDD version 07, dated 02/10/2011- approved on 02/03/2012
Methodology used for Verification:	ACM0006, Version 04 dated 01/11/2006 to 17/05/2007
Applicable Period:	From 20/03/2008 to 25/03/2009
Total GHG Emission Reductions Verified:	143,007 tCO_2e

Signed on behalf of the Verification Body by Authorized Signatory

Signature:

Name: Siddharth Yadav

Date: 13/09/2012

8. Document References

/1/ Applied methodology ACM0006 version 04 valid from 01/11/2006 to 17/05/2007

/2/ Approved revised Project Design Document, version 7, dated 02/10/2011

/3/ Registered PDD Version 05 dated 24/09/2007

/4/ Validation and Verification Manual version 1.2 dated 30/07/2010

/5/ Monitoring Report for this monitoring period

MR Version	Date of Revision	Main changes reason for Revision
Version 1.0	15/06/2009	Original version published on the UNFCCC website.(Before PDD revision)
Version 2.0	27/07/2011	The VVM MR template has been applied in this version of MR. Section C: Referring to the revised PDD, relevant revision has been made in the monitoring system and monitoring parameters. Section D and Section: Referring to the finding raised by the assessment team during the first periodic verification. Relevant revision has been made in MR. This version of MR is prepared for second on site visit.
Version 3.0	25/05/2012	This version of MR is updated based on the final version of approved revised PDD and revised monitoring plan. Referring to the revised PDD, relevant revision has been made in the monitoring system and monitoring parameters. The final emission reductions have been re-calculated. Relevant revised section: section A, section B, section C, section D and section E.
Version 3.1	19/07/2012	This version of MR is updated based on the FO raised by the assessment team. Relevant revised section: section C, section D and section E.
Version 4.0	08/08/2012	This version of MR is updated based on the new FOs raised by the assessment team Relevant revised section: section B, section C, section D and section E.

/6/ ER calculation spreadsheet for this monitoring period version 1.0 dated 15/06/2009, version 2.0 dated 21/05/2012, version 3.0 dated 19/07/2012, version 4.0 dated 08/08/2012

/7/ Validation Report issued by TÜV SÜD, No 1041284 dated 20/03/2008

/8/ Validation Opinion for the revised PDD, issued by SGS, dated 19/11/2011

/9/ Line connection diagram of the electricity system of the Biomass power plant

/10/ PPA signed between the project owner and the grid company

/11/ Project Implementation Time Line and Records: Construction starting date, trial operation date and final commercial operation starting date.

/12/ EB 48 Annex 66 Procedures for notifying and requesting approval of changes from the project activity as described in the registered project design document

/13/ EB 48 Annex 67 Guidelines on assessment of different types of changes from the project activity as described in the registered PDD

/14/ CDM Manual (Including Management Process, Data Collection Procedure ,Roles and responsibliity, Emergancy Plan)

/15/ Stuff Training Records and Qualification Certificates

/16/ Signed Technical Agreements for Danmark BWE Boiler, Turbine and Power Generator

/17/ Guidelines on Completeness Check of Request for Issuance (Annex 68, EB 48), version 01, dated 17/07/2009

/18/ EB66 Meeting Report Paragraph 77.

/19/ DL/T448-2000 Technical administrative code of electric energy metering

/20/ Monthly Electricity Meters Reading Records provided by Power Plant Operator.

/21/ Electricity Transaction Notes for Electricity delivered and consumed from the grid

/22/ Electricity sales invoice for electricity delivered and consumed from the grid (including electricity consumed at the biomass collection stations)

/23/ Specific statement issued by the grid company to prove the measured amount from 20/03/2008 to 25/03/2009.

/24/ Monthly Inventory table of biomass utilised by the project.

/25/ Monthly and daily weighing records of biomass utilised by the project

/26/ Measured Moisture Content of Biomass Residues covering this monitoring period

/27/ Monthly summary of testing result of NCV of each kind of biomass utilized by the project

/28/ Daily records of transportation and distance of each biomass supplier, and monthly summary on number of truck trips and average distance

/29/ Electric Map of the biomass residues collection sites

/30/ Statics records of the transport distance of biomass residues collection sites

/31/ Metering Records of electricity meters installed at the biomass collection stations covering this monitoring period.

/32/ Sales receipts of electricity consumed at the biomass collection stations covering this monitoring period

/33/ Survey result of available and utilised biomass in Gaotang City, Xiajin City, Guanxian City, and Linqing City, Pingyuan City, Wucheng City, Yucheng City, Chiping City issued on by Statistic Bureau of the eight cities. Covering this monitoring period.

/34/ Monthly summary records of diesel combusted at the project site covering this monitoring period

/35/ Diesel sales invoice covering this monitoring period.

/36/ GB/T19147-2003 Automobile diesel fuels

/37/ 2006 IPCC Guidelines for National Greenhouse Gas Inventories

/38/ China Energy Statistic Yearbook, Compiled by Department of Energy Statistics, National Bureau of Statistics, People's Republic of China.

/39/ Calibration certificates of electricity meter (main meter) covering the monitoring period from 20/03/2008 to 25/03/2009

/40/ Calibration certificates of electricity meters (electricity meter installed in the biomass collection station) covering the monitoring period from 20/03/2008 to 25/03/2009

/41/ Accreditation Certificate of Liao Cheng Power Supply Institute, issued by Quality and Technology Supervision Bureau of Shandong Province

/42/ Accreditation Certificate of Gaotang Power Supply Company issued by Quality and Technical Supervision Bureau of Shandong province

/43/ Calibration certificates of electronic truck scales used by the project, issued by Quality and Technology Supervision Inspection Institute of Liaocheng city, with period of validity covering the monitoring period from 20/03/2008 to 25/03/2009

/44/ Accreditation Certificate of by Quality and Technology Supervision Inspection Institute of Liaocheng city, issued by Quality and Technology Supervision Bureau of Shandong Province

/45/ Calibration Certificate of the calorimeter, issued by Quality and Technology Supervision Inspection Institute of Liaocheng city, with period of validity covering the monitoring period from 20/03/2008 to 25/03/2009

/46/ Accreditation Certificate of Quality and Technology Supervision Inspection Institute of Liaocheng city, issued by Quality and Technology Supervision Bureau of Shandong Province

/47/ Calibration Certificate of the moisture analysiser, issued by Quality and Technology Supervision Inspection Institute of Liaocheng city, with period of validity covering the monitoring period from 20/03/2008 to 25/03/2009

/48/ Accreditation Certificate of Quality and Technology Supervision Inspection Institute of Liaocheng city, issued by Quality and Technology Supervision Bureau of Shandong Province

/49/ Calibration Certificate of the flow meter, issued by Quality and Technology Supervision Inspection Institute of Liaocheng city, with period of validity covering the monitoring period from 20/03/2008 to 25/03/2009

/50/ Accreditation Certificate of Quality and Technology Supervision Inspection Institute of Gaotang city, issued by Quality and Technology Supervision Bureau of Shandong Province

/51/ Biomass Power Generation Technology, Prepared by Shandong Electric Power Engineering Consulting Institute Corp.Ltd, The People's Republic of China. 09/02/2007. Author: He Huang.

/52/ EB54 Annex 34 Guidelines for Completing the Monitoring Report Form Version 01 dated 28/05/2010

/53/ Issuance-informtion and reporting checklist version 2.0 dated 03/06/2011

/54/ JJG 596-1999 National Metrological Calibration regulation for Electrical Energy Meters with

electronics

/55/ Clarification issued by the Gaotang Power Supply Company refer to the calibration frequency for the meters installed at the collection sties, Issued in Aug 2012

9. Findings Overview

Findings Overview Summary

	CARs	CLs	FARs
Total Number raised	14	1	0

Date:	04/07/2009		Raised by:	Members of the assessment team	
Type:	CAR	Number:	CAR #1	Reference:	AU4i Section 3

Lead Assessor Comment: **Date:** 06/07/2009

In the registered PDD section B.7.1(page 33), parameter EG_y is measured by meters with accuracy of 0.2%, while during the onsite visit for the project, it was found that the installed electric meters' accuracy level is 0.5%(accuracy level lower than 0.2%). Action needs to be taken so that actual practice can be in compliance with the monitoring plan.

Project Participant Response: **Date:** 19/07/2012

According to the PPA signed between the project owner and the North-China Power Grid (Liaocheng Power Supply Bureau), the North-China Power Grid has the right to possess, operate and maintain the Main Meter (S/N: 200306083C0123). Which means that the project owner has no right to settle or change the accuracy of the main meter, Liaocheng Power Supply Bureau set the accuracy of the main meter to be 0.5 which is just common practice in Shandong Provincial Power Grid.
On the other hand, the accuracy level 0.5 in this project is in line with national standard "Technical Administrative Code of Electric Energy Metering" (DL/T448--2000): it is required that power plants with installed capacity under 100MW must use electricity meters with accuracy level not inferior than 1.0 in paragraphs 5.1.3 and 5.3 of DL/T448-2000. So the accuracy 0.5 of the main meter in this project is in line with the national standard. Furthermore, PPs decided to discount 0.5% of EG_y monitored by electricity meter with accuracy 0.5 for conservation. And it has been approved by EB in the revised monitoring plan (section B.7.1) on 02/03/2012.
For this monitoring period, the measuring result is 180,722.52MWh. 0.5% of EGy has been discounted to calculate the emission reductions, and the final reported EG_y is 179,818.91MWh. Please see the detailed calculation in the revised ER calculation spreadsheet and monitoring report.

Documentation Provided as Evidence by Project Participant:

Updated Monitoring report Version 3.1 Dated 19/07/2012
Updated ER calculation spreadsheet Version 3.0 dated 19/07/2012

Information Verified by Lead Assessor:

Updated Monitoring report Version 3.1 Dated 19/07/2012
Updated ER calculation spreadsheet Version 3.0 dated 19/07/2012
Approved revised PDD Version 7 dated 02/10/2011

Reasoning for not Acceptance or Acceptance and Close Out:

PP clarified that the electric meter is installed and controlled by the regional power distribution company (Liaocheng Power Supply Bureau) and the project owner had no right to set the accuracy level of monitoring device. Installation of electric meters with 0.5 accuracy level in 30 MW power stations is inline with Chinese industrial standard DL/T 448-2000. The following solution have been applied by PP: 0.5% of electricity delivery amount will be deducted from total EG_y for each monitoring period. The assessment team considered this is a conservative solution for meter accurate level decrease. Revision made by PP ensures compliance between the actual monitoring and the revised monitoring plan. $EG_{project,y}$ is continuously measured by meters with the accuracy not less than 0.5. Electricity delivered to the grid will be measured by meter (S/N 200306083C0123) installed. **CAR#1** is therefore closed by the assessment team.

Acceptance and Close out by Lead Assessor: **Lenore Yin**	**Date:** 20/07/2012

Date:	04/07/2009		Raised by:	Members of the assessment team	
Type:	CAR	Number:	CAR #2	Reference:	AU4i Section 3

Lead Assessor Comment:	**Date:** 06/07/2009
According to ACM0006 ver04, the parameter NCV_k (Net Calorific Value of Biomass Residue type K) need to be measured at least every six months. In the registered PDD (page 35), the parameter NCV_k is extracted from public available data source (China Energy Statistical Yearbook). The monitoring plan is not in compliance with the methodology applied. CAR #2 is raised requiring PP to revise the monitoring plan.	
Project Participant Response:	**Date:** 19/07/2012

In the revised PDD(section B.7.1 page 42), the monitoring table of parameter of NCV_k is as follows:

Data / Parameter:	NCV_K
Data unit:	TJ / tonne
Description:	Net calorific value of biomass residue type *k* consumed by the project
Source of data to be used:	Measured in project plant
Value of data applied for the purpose of calculating expected emission reductions in section B.5	0.01371 TJ/tonne, 0.01466 TJ/tonne and 0.01187 TJ/tonne on dry base for cotton stalk, wood residues and wheat bran respectively.
Description of measurement methods and procedures to be applied:	The net calorific value of biomass residues should be measured and reported in the chemical laboratory at least per six months. For each test, at least three samples should be measured for each batch of biomass type.
QA/QC procedures to be applied:	Check consistency of data from the different resources. If the values differ significantly, the most conservative will be used.
Any comment:	The analysis will be made at least every six months. And, NCV of all types of biomass fuels should be tested separately.

This measurement should be in line with the requirement by the approved methodology ACM0006 version04, And it has been approved by EB in the revised monitoring plan (section B.7.1) on 02/03/2012.
During this monitoring period, NCV_k has been measured according to the revised MP.

Documentation Provided as Evidence by Project Participant:

The revised monitoring plan in the approved revised PDD Version 7 dated 02/10/2011
Updated Monitoring report Version 03.1 Dated 19/07/2012
Updated ER calculation spreadsheet Version 3.0 Dated 19/07/2012

Information Verified by Lead Assessor:

The revised monitoring plan in the approved revised PDD Version 7 dated 02/10/2011
Updated Monitoring report Version 03.1 Dated 19/07/2012
Updated ER calculation spreadsheet Version 3.0 Dated 19/07/2012

Reasoning for not Acceptance or Acceptance and Close Out:

In the revised monitoring plan, NCV_k is amended as an on site monitored parameter as per ACM0006 Version 04 and parameter NCV_k represents all types of biomass residues which will be applied to project activity. Revision of description of measurement methods makes the revised MP in compliance with the applied methodology. NCV_k value of biomass residues will be measured in the chemical laboratory. Relevant changes for parameter NCV_k are also in line with the project actual implementation status. **CAR#2** is therefore closed by the assessment team.

Acceptance and Close out by Lead Assessor: **Lenore Yin**	**Date:** 20/07/2012

Date:	04/07/2009		Raised by:	Members of the assessment team	
Type:	CAR	Number:	CAR #3	Reference:	AU4i Section 3
Lead Assessor Comment:			**Date:** 06/07/2009		

In the registered PDD and ACM0006 ver04, CH_4 emission from combustion of biomass residues for electricity is included in the project boundary. The formula used to calculate $PE_{Biomass,CH4,y}$ (methane emissions from combustion of biomass residues during the year y) is:

$$PE_{biomass,CH4,y} = EF_{CH4,BF} * \sum_k BF_{,k,y} * NCV_k$$

The $EF_{CH4,BF}$ (CH_4 emission factor for the combustion of biomass residues in the project plant) is a parameter that needs to be monitored according to the methodology applied.
However, $EF_{CH4,BF}$ is not included in the monitoring plan.
CAR #3 is raised requesting PP to revise the monitoring plan. Please also provide detailed information in this regard in the monitoring report.

Project Participant Response: **Date:** 19/07/2012

The monitoring table of $EF_{CH4,BF}$ has been added in the revised monitoring plan as follows:

Data / Parameter:	$EF_{CH4,BF}$
Data unit:	tCH_4/GJ
Description:	CH4 emission factor for the combustion of biomass residues in the project plant
Source of data to be used:	Default values, as provided in Table 3 of ACM0006 (Version 4) which sources from 2006 IPCC Guideline, Volume 2, Chapter 2, Tables 2.2 to 2.6.
Value of data applied for the purpose of calculating expected emission reductions in section B.5	According to the IPCC default value provided in table 3 of ACM0006, the CH4 emission factor of combustion of biomass in agriculture is 0.03 tCH4/TJ. Considering a conservativeness factor of 1.37, the CH4 emission factor in this PDD is taken as 0.0000411 tCH4/GJ.
Description of measurement methods and procedures to be applied:	
QA/QC procedures to be applied:	Check this parameter using the latest version of IPCC value.
Any comment:	

It has been approved by EB in the revised monitoring plan (section B.7.1) on 02/03/2012.
During this monitoring period, $EF_{CH4,BF}$ has been stated in the revised monitoring report(section D.2).

Documentation Provided as Evidence by Project Participant:

The revised monitoring plan in the approved revised PDD Version 7 dated 02/10/2011
Updated Monitoring report Version 3.1 Dated 19/07/2012
Updated ER calculation spreadsheet Version 3.0 Dated 19/07/2012

Information Verified by Lead Assessor:

The revised monitoring plan in the approved revised PDD Version 7 dated 02/10/2011
Updated Monitoring report Version 3.1 Dated 19/07/2012
Updated ER calculation spreadsheet Version 3.0 Dated 19/07/2012

Reasoning for not Acceptance or Acceptance and Close Out:

In the registered PDD and ACM0006 ver04, CH_4 emission from combustion of biomass residues for electricity is included in the project boundary. The formula used to calculate $PE_{Biomass,CH4,y}$ (methane emissions from combustion of biomass residues during the year y) is:

$$PE_{biomass,CH4,y} = EF_{CH4,BF} * \sum_{k} BF_{,k,y} * NCV_k$$

The $EF_{CH4,BF}$ (CH_4 emission factor for the combustion of biomass residues in the project plant) is a parameter that needs to be monitored according to the methodology applied.
Through document review, the assessment team identified that $EF_{CH4,BF}$ has been included in the revised monitoring plan.
Relevant revision has been made by PP and revised monitoring plan has been approved by EB. As per the approved revised monitoring plan and the IPCC default value provided in table 3 of ACM0006 version 04, the CH_4 emission factor of combustion of biomass in agriculture is 0.03 tCH_4/TJ. Considering a conservativeness factor of 1.37, the CH_4 emission factor in revised monitoring plan is taken as 0.0000411 tCH4/GJ

CAR#3 is therefore closed by the assessment team.

Acceptance and Close out by Lead Assessor: **Lenore Yin**	**Date:** 20/07/2012

Date:	04/07/2009		Raised by:	Members of the assessment team	
Type:	CAR	Number:	CAR #4	Reference:	AU4i Section 3
Lead Assessor Comment:				**Date:** 06/07/2009	
In the registered PDD section B.7.1 (page 35), the parameter “Moisture content of the biomass residues” is continuously monitored by moisture analyzer, measured in collection point and in power plant. During the onsite visit for the project, it was found that this parameter is measured by moisture analyzer inside the power plant laboratory. Action needs to be taken so that actual practice can be in compliance with the monitoring plan.					
Project Participant Response:				**Date:** 19/07/2012	

In the revised monitoring plan, the moisture content of the biomass residues would be measured continuously by moisture analyzer in the power plant laboratory. The monitoring table of moisture in the revised monitoring plan is as follows:

Data / Parameter:	Moisture content of the biomass residues
Data unit:	% water content
Description:	Moisture content of each biomass residue type k
Source of data to be used:	On-site measurements by moisture analyzer
Value of data applied for the purpose of calculating expected emission reductions in section B.5	24.81 %, 31.17 %, 24.99 % of cotton stalk, wood residues and wheat bran respectively.
Description of measurement methods and procedures to be applied:	Continuously monitored by moisture analyzer. Moisture content of the biomass residues will be both measured in the power plant and calculated the mean values at least annually.
QA/QC procedures to be applied:	
Any comment:	In case of dry biomass, monitoring of this parameter is not necessary

It has been approved by EB in the revised monitoring plan (section B.7.1) on 02/03/2012.
During the monitoring period, moisture measurement procedures were done according to the approved changed monitoring plan, and the measuring results have been reported in the revised monitoring report.

Documentation Provided as Evidence by Project Participant:

The revised monitoring plan in the approved revised PDD Version 7 dated 02/10/2011
Updated Monitoring report Version 3.1 Dated 19/07/2012
Updated ER calculation spreadsheet Version 3.0 Dated 19/07/2012

Information Verified by Lead Assessor:

The revised monitoring plan in the approved revised PDD Version 7 dated 02/10/2011
Updated Monitoring report Version 3.1 Dated 19/07/2012
Updated ER calculation spreadsheet Version 3.0 Dated 19/07/2012

Reasoning for not Acceptance or Acceptance and Close Out:

In the revised monitoring plan, description of measurement methods and procedures to be applied for this parameter is: Moisture content of the biomass residues will be both measured in the power plant and calculated for the mean values at least annually. This revision ensures the completeness of the monitoring process and compliance between the revised monitoring plan and the actual monitoring procedure. **CAR#4** is therefore closed by the assessment team.

Acceptance and Close out by Lead Assessor: **Lenore Yin**	**Date:** 20/07/2012

Date:	04/07/2009		Raised by:	Members of the assessment team	
Type:	CAR	Number:	CAR #5	Reference:	AU4i Section 3
Lead Assessor Comment:			**Date:** 06/07/2009		

According to the registered PDD and ACM0006 ver04, the project chooses approach L2 to assess leakage effects. During the monitoring period, the PP need to demonstrate that the quantity of available biomass residue of biomass in the region is at least 25% larger than quantity of biomass residues of type k that are utilized.
Two parameters need to be monitored during crediting period.
1. "Quantity of biomass residues of type k that are utilized in the defined geographical region"

2. "Quantity of available biomass residues of type K in the region"

In the PDD MP page 39, monitoring parameters are
1. "Quantity of cotton stalks that are utilized in the defined geographical region."
2. "Quantity of cotton stalks in the region."
The monitoring parameters in the monitoring plan are not in compliance with the methodology requirement. During onsite visit, the assessment team also found the biomass sources are cotton straw, wood and cortices and wheat brain. Only collecting monitoring data for cotton stalks is not enough for this project. Please make relevant correction.

Project Participant Response: | **Date:** 19/07/2012

The change, that three types of biomass residues (Cotton stalk, Wood residues, and wheat bran) have been applied to the project, has been stated in the revised PDD version07 and approved by EB on 02/03/2012. Statistics of both quantity of biomass residues (i.e cotton stalk, wood residues and wheat bran.) utilized in the defined geographical region and quantity of available biomass residues (i.e cotton stalk, wood residues and wheat bran.) in the region have been provided by local governments and stated in the revised PDD (section B.7.1). It should be in line with the requirement by applied methodology ACM0006 ver04 and it has been approved by EB on 02/03/2012.
During this monitoring period, statistics for these three types of biomass residues have been provided by local governments, and demonstration of abundant surplus of biomass in the region of the project activity is as following table:

	Cotton Straw (t)	Wood and residues (t)	Wheat bran (t)
Available Biomass in the region	966614	1226463	90450
Biomass utilised out of the project	204070	316150	13300
Biomass utilised by the project	83434.42	130060.01	15409.07
Total biomass utilised, including the project	287504.42	446210.01	28709.07
Available Biomass/Total biomass utilised	336%	275%	315%
Available Biomass/Total biomass utilised -100%	236%	175%	215%
Abundant surplus? (more than 25%)	Yes	Yes	Yes

It shows that the quantity of available biomass residues in the region is more 25% larger than quantity of biomass residues of type k that are utilized. So there is no leakage caused by this project during this monitoring period.

Documentation Provided as Evidence by Project Participant:

The revised monitoring plan in the approved revised PDD Version 7 dated 02/10/2011
Updated Monitoring report Version 3.1 Dated 19/07/2012
Updated ER calculation spreadsheet Version 3.0 Dated 19/07/2012

Information Verified by Lead Assessor:

The revised monitoring plan in the approved revised PDD Version 7 dated 02/10/2011 Updated Monitoring report Version 3.1 Dated 19/07/2012 Updated ER calculation spreadsheet Version 3.0 Dated 19/07/2012
Reasoning for not Acceptance or Acceptance and Close Out:
The monitoring parameters in the monitoring plan are not in compliance with the methodology requirement. During onsite visit, the assessment team also found the biomass sources are cotton straw, wood and cortices and wheat brain. Only collecting monitoring data for cotton stalks is in line with the actual status. Rlevant revision has been made in the monitoring plan and registered PDD and approved by EB. In the revised PDD and registered monitoring plan, Parameters description has been revised to contain all types of biomass residue. CAR#5 is therefore closed by the assessment team.

Acceptance and Close out by Lead Assessor: **Lenore yin**	**Date:** 20/07/2012

Findings for First periodic verification

Date:	04/07/2009		Raised by:	Members of the assessment team	
Type:	CAR	Number:	CAR #6	Reference:	AU4 Section 3

Lead Assessor Comment:	**Date:** 06/07/2009
According to ACM0006 ver4, Parameter $BF_{k,y}$ (Quantity of biomass residue type k combusted in the project during the year y in a volume or mass unit) needs to adjust for the moisture content in order to determine the quantity of dry biomass. The monitoring report version 1 did not consider the monitoring parameter biomass moisture content. Therefore, the BF_y values presented in the monitoring report is not for the dry biomass. CAR #7 is raised to require PP to add the parameter moisture content into monitoring report and recalculate the $BF_{k,y}$ value.	
Project Participant Response:	**Date:** 19/07/2012
Based on the revised MP, three different types of biomass residues (cotton straw, wood residues and wheat bran) have been included in the monitoring report. Parameter BFk,y has been adjusted for the moisture content in order to determine the quantity of dry biomass in the revised monitoring report and ER calculation spreadsheet. PP has added moisture content and recalculate the BFk,y in revised monitoring report.	

	Cotton straw (ton)	Wood residues (ton)	Wheat bran (ton)
MR version 1.0 (wet base)	83,434.42	130,060.01	15,409.07
Updated MR (dry base)	66,011.91	91,902.57	11,928.17

Documentation Provided as Evidence by Project Participant:
Updated Monitoring report Version 3.1 Dated 19/07/2012 Updated ER calculation spreadsheet Version 3.0 Dated 19/07/2012
Information Verified by Lead Assessor:
The revised monitoring plan in the approved revised PDD Version 7 dated 02/10/2011 Updated Monitoring report Version 3.1 Dated 19/07/2012 Updated ER calculation spreadsheet Version 3.0 Dated 19/07/2012 Monthly and daily weighing records of biomass utilised by the project in MP1 Measured Moisture Content of Biomass Residues covering this monitoring period in MP1 Monthly Inventory table of biomass utilised by the project in MP1
Reasoning for not Acceptance or Acceptance and Close Out:
Based on the revised monitoring plan and applied methodology, quantity of three kinds of biomass residues have been reported separately in the final version of MR. Measured moisture content (discussed in section 3.4.3) has been taken into account, the final revised value have been provided in the MR and ER spreadsheet and verified to be correct. **CAR#6** is therefore closed by the assessment team.

Acceptance and Close out by Lead Assessor: **Lenore yin**	**Date:** 20/07/2012

Date:	04/07/2009		Raised by:	Members of the assessment team	
Type:	CAR	Number:	CAR #7	Reference:	AU4 Section 3

Lead Assessor Comment: **Date:** 06/07/2009

In methodology ACM0006 ver4, the parameter NCV_k is based on dry biomass. However, through site visit and interview with the laboratory analyzer, the assessment team found the data collected from on site laboratory and reported in version 1 of the monitoring report is the Calorific Value of the biomass residue on wet basis. CAR #7 is raised to require PP to report the NCV of the biomass residue on dry basis as required by the methodology and the monitoring plan of the project.

Project Participant Response: **Date:** 19/07/2012

The NCV of biomass residues on dry basis is monitored by calorimeter in the chemical laboratory of the power plant. PPs have reported the NCV of biomass residues on dry basis in the revised monitoring report as required by the applied methodology ACM0006 ver4.

	Cotton straw		Wood residues		Wheat bran	
	MR version1.0 (NCV_1(TJ/t))	Updated MR (NCV_1(TJ/t) dry base)	MR version1.0 (NCV_2(TJ/t))	Updated MR (NCV_2(TJ/t) dry base)	MR version1.0 (NCV_3(TJ/t))	Updated MR (NCV_3(TJ/t) dry base)
20/03/2008-29/03/2008	0.01318	0.01402	0.01229	0.01449	0.01275	0.01420
30/03/2008-28/04/2008	0.01229	0.01406	0.01125	0.01296	0.01176	0.01394
29/04/2008-29/05/2008	0.01177	0.01355	0.01241	0.01423	0.00972	0.01211
30/05/2008-28/06/2008	0.01192	0.01377	0.01160	0.01353	0.01120	0.01206
29/06/2008-29/07/2008	0.01063	0.01233	0.01191	0.01373	0.01312	0.01482
30/07/2008-28/08/2008	0.01086	0.01242	0.01139	0.01287	0.01238	0.01406
29/08/2008-26/09/2008	0.01186	0.01354	0.01243	0.01429	0.01358	0.01533
27/09/2008-25/10/2008	0.01165	0.01343	0.01153	0.01354	0.01176	0.01344
26/10/2008-25/11/2008	0.01155	0.01429	0.01199	0.01398	0.01090	0.01225
26/11/2008-25/12/2008	0.01174	0.01333	0.00939	0.01167	0.00827	0.00904
26/12/2008-22/01/2009	0.00915	0.01292	0.00912	0.01312	0.00734	0.01001
23/01/2009-22/02/2009	0.01185	0.01619	0.01053	0.01541	0.00734	0.00991
23/02/2009-25/03/2009	0.01257	0.01483	0.01091	0.01710	0.00824	0.00981

Documentation Provided as Evidence by Project Participant:

The revised monitoring plan in the approved revised PDD Version 7 dated 02/10/2011
Updated Monitoring report Version 3.1 Dated 19/07/2012
Updated ER calculation spreadsheet Version 3.0 Dated 19/07/2012

Information Verified by Lead Assessor:	
The revised monitoring plan in the approved revised PDD Version 7 dated 02/10/2011 Updated Monitoring report Version 3.1 Dated 19/07/2012 Updated ER calculation spreadsheet Version 3.0 Dated 19/07/2012 Monthly summary of testing result of NCV of each kind of biomass utilized by the project in MP1	
Reasoning for not Acceptance or Acceptance and Close Out:	
In the updated monitoring report, measured monthly average NCV values of each kind of biomass residues in dry base have been reported in the final version of MR and the ER spreadsheet. All test records during this monitoring period have been collected and verified by the assessment team. **CAR#7** is therefore closed by the assessment team.	
Acceptance and Close out by Lead Assessor: **Lenore Yin**	**Date:** 20/07/2012

Date:	04/07/2009		Raised by:	Members of the assessment team	
Type:	CL	Number:	CL #8	Reference:	AU4 Section 5
Lead Assessor Comment:				**Date:** 06/07/2009	
The reported value of total emission reductions during the period from 20/03/2008 to 25/03/2009 is higher than that estimated in the registered PDD for the same period. Please clarify the difference.					
Project Participant Response:				**Date:** 19/07/2012	
During the actual operation, the annual power generation of this project activities is more than that estimated in the original registered PDD. PPs submitted a notification about the change of higher power generation to EB and it has been approved by EB in the revised PDD version 07 on 02/03/2012. According to the approved changed PDD, the emission reductions is estimated to be 180,881tCO_2e. In this monitoring periond (20/03/2008-25/03/2009, 371 days), the total emission reductions achieved are 177,513tCO_2e. It should be 3.45% lower than the estimation in the approved changed PDD, which is calculated as (180,881/365*371-177,513)/(180,881/365*371)*100%. However, in paragraph 77 of the EB66 meeting report, EB just allow subsequent requests for issuance under the condition that the annual amount of CERs to be issued to this project activity shall be capped at the average annual emissions reductions estimated in the original registered PDD, i.e. 140,695tCO_2e. Therefore, the amount of emission reductions which could be claimed for this monitoring period (totally 371 days) should be 143,007 tCO_2e (143,007tCO_2e = 140,695tCO_2e / 365 * 371) under the cap requested by EB. Relevant statements in the MR have been revised.					
Documentation Provided as Evidence by Project Participant:					
Revised PDD Version 7 dated 02/10/2011 Updated Monitoring report Version 3.1 Dated 19/07/2012 EB 66th meeting report.pdf (page 14, paragraph 77) Dated 02/03/2012					
Information Verified by Lead Assessor:					
Registered PDD Version 05 dated 24/09/2007 Updated Monitoring report Version 3.1 Dated 19/07/2012 EB 66th meeting report.pdf (page 14, paragraph 77) Dated 02/03/2012 Approved revised PDD Version 7 dated 02/10/2011					
Reasoning for not Acceptance or Acceptance and Close Out:					

During the validation stage, PP clarified that the permanent change happed during the actual implementation stage. Based on the updated PDD, the total estimated annual power generation by this project has been increased to 187,626 MWh/year and the re-estimated annual emission reduction is 180,881 tCO_2e. In accordance with the Guidelines on Completeness Check of Request for Issuance (Annex 68, EB 48,), the final version of monitoring report contains a comparison of the actual emission reduction claimed for this monitoring period with the estimate in the approved revised PDD. The estimated emission reductions were calculated as 183,854tCO_2e (180,881tCO_2e/365 days * 371 days =183,854 tCO_2e) for the period 20/03/2008 to 25/03/2009 (371 days) as per the estimation in the registered PDD. The actual emission reduction has been verified as 177,513tCO_2e, which is 3.45% lower than the ex-ante estimate. Based on the information in the approved revised PDD, the assessment team confirmed that no significant increase in estimated emission reductions.

Based on the EB66 meeting report Para 77, the EB agreed to accept the changes for the PDD and allow subsequent requests for issuance under the condition that the annual amount of CERs to be issued to the project activity shall be capped at the average annual emissions reductions estimated in the original registered PDD. Therefore, the final requested ER in this monitoring period is 143,007 tCO_2e. Relevant description has been applied in the final version of MR and verified to be correct. **CL#8** is closed by the assessment team.

Acceptance and Close out by Lead Assessor: **Lenore Yin**	**Date:** 20/07/2012

Date:	19/07/2012		Raised by:	Members of the assessment team	
Type:	CAR	Number:	CAR #9	Reference:	AU4 Section 5

Lead Assessor Comment:	**Date:** 19/07/2012
Through document review, the assessment team identified that reported data in MR version 01 for parameter N_y is Please clarify the difference and make relevant revision if necessary.	
Project Participant Response:	**Date:** 19/07/2012
The value of N_y during 26/12/2008-22/01/2009 was reported wrongly in MR version 01. It has been corrected in the revised MR (from 3811 to 3815). The emission result of PET_y is not been affected.	
Documentation Provided as Evidence by Project Participant:	
Updated Monitoring report Version 3.1 dated 19/07/2012	
Information Verified by Lead Assessor:	
Updated Monitoring report Version 3.1 dated 19/07/2012 Updated ER calculation spreadsheet Version 3.0 dated 19/07/2012 Daily records of transportation and distance of each biomass supplier, and monthly summary on number of truck trips and average distance in MP1.	
Reasoning for not Acceptance or Acceptance and Close Out:	
Relevant revision has been made by PP and verified to be correct. CAR#9 is therefore closed by the assessment team	
Acceptance and Close out by Lead Assessor: **Lenore Yin**	**Date:** 20/07/2012

Date:	06/08/2012		Raised by:	Members of the assessment team	
Type:	CAR	Number:	CAR #10	Reference:	AU4 Section 2

Lead Assessor Comment:	**Date:** 06/08/2012

Issues Relate to the Monitoring Report:

Point 1

According to guideline EB54_Annex 34 "Guidelines for completing the Monitoring Report form (CDM-MR)", in MR section B.1. the description should include a brief description of: (i) events or situations that occurred during the monitoring period, which may impact the applicability of the methodology, and (ii) how the issues resulting from these events or situations are being addressed.

No specific information presented in MR version 03.1 section B.1. Corrective Action request is therefore raised.

Point 2

Inappropriate future tense is found in MR version 03.1. Please check the monitoring report and make relevant revision if necessary.

Point 3

Parameters ($EF_{km,CO2,y}$, $FF_{project,plant,i,y}$, ρ_{diesel}, $EF_{CO2,FF,I,NCVi}$, $NCV_{k*EFburning,CH4,k,y}$, $EF_{CH4,BF}$) discussed in section D.1 are identified as monitoring parameter in approved revised PDD. Through document review, the assessment team identified these parameter has been reported in section D.1 Data and Parameters determined at registration and not monitored during the monitoring period, including default values and factors. Please kindly check and make relevant revision if necessary.

CAR#10 is therefore raised by the assessment team.

Project Participant Response:	**Date:** 08/08/2012

Point 1

Two permanent changes occurred during the project actual implementation stage, which related to the 1st monitoring period.

Change 1: Three types of biomass residues (Cotton stalk, Wood residues and Wheat Bran) have been applied to the project.

Change 2: Higher power generation.

Base on these two changes, the PDD has been revised and the re-analysis for the applicability of the methodology has been done. The result shows that the methodology of ACM0006 still applicable. The revised PDD has been approved by EB.
Relevant revision has been made in the Section B.1 of the monitoring report.
Point 2
The inappropriate future tense has been revised in the monitoring report.
Point 3
As per the approved revised PDD, Parameters ($EF_{km,CO2,y}$, $FF_{project,plant,i,y}$, ρ_{diesel}, $EF_{CO2,FF,I,NCVi}$, $NCV_{k*EFburning,CH4,k,y}$, $EF_{CH4,BF}$) are identified as parameters monitored. These parameters have been removed from Section D.1 (Data and Parameters determined at registration and not monitored during the monitoring period, including default values and factors) to Section D.2 (Data and Parameters monitored) in the updated monitoring report.

Documentation Provided as Evidence by Project Participant:

Updated Monitoring report Version 4.0 dated 08/08/2012

Information Verified by Lead Assessor:

Updated Monitoring Report Version 4.0 dated 08/08/2012
Revised PDD Version 7 dated 02/10/2011
Validation Opinion for the revised PDD, issued by SGS, dated 19/10/2011
Applied methodology ACM0006 version 04 valid from 01/11/2006 to 17/05/2007EB54 Annex 34
EB54 Annex 34 Guidelines for Completing the Monitoring Report Form Version 01 dated 28/05/2010

Reasoning for not Acceptance or Acceptance and Close Out:

Monitoring report has been revised based on the EB54 Annex 34. Two permanent changes occurred in the actual implementation stage which may impact the applicability of the monitoring process has been re-analysis in the revised PDD and validated by the assessment team. Based on the information presented in the revised PDD and the relevant supporting evidence provided by PP, the assessment team considered that the ACM0006 version 04 is still applicable for this project. The revised PDD has been approved by EB. Detailed information please refers to the revised PDD and validation opinion issued by the assessment team. Furthermore, the inappropriate future tense has been removed from the updated MR and the all the monitoring parameters have been reported in the correct section. All the information (data and variables) provided in the updated monitoring report are in compliance with that is stated in the RMP and in line with the requirement presented in the EB54 Annex 34. CAR #10 is therefore closed by the assessment team.
Acceptance and Close out by Lead Assessor: **Lenore Yin** — **Date:** 08/08/2012

Date:	06/08/2012		Raised by:	Members of the assessment team	
Type:	CAR	Number:	CAR #11	Reference:	AU4 Section 3

Lead Assessor Comment: **Date:** 06/08/2012
As per information and reporting checklist version 2.0, it is requested that the ERs spreadsheet shall contain the formulae of calculation that are shown in the spreadsheet cells whenever possible. Through document review, the assessment team identified that the ER spreadsheet version 3.0 are not fully in line with this requirement. CAR#11 is therefore raised by the assessment team.
Project Participant Response: **Date:** 08/08/2012
The ER calculation spreadsheet has been reviewed, and formulae of calculation have been shown in the spreadsheet cells in the updated ER calculation spreadsheet.
Documentation Provided as Evidence by Project Participant:
Updated ER calculation spreadsheet version 4.0 dated 08/08/2012
Information Verified by Lead Assessor:
Updated ER calculation spreadsheet version 4.0 dated 08/08/2012 Issuance-informtion and reporting checklist version 2.0 dated 03/06/2011
Reasoning for not Acceptance or Acceptance and Close Out:
Through document review, the assessment team confirmed that updated ER calculation spreadsheet is in line with the specific EB requirements. CAR#11 is therefore closed by the assessment team.
Acceptance and Close out by Lead Assessor: **Lenore Yin** — **Date:** 08/08/2012

Date:	06/08/2012		Raised by:	Members of the assessment team	
Type:	CAR	Number:	CAR #12	Reference:	AU4 Section 3

Lead Assessor Comment: **Date:** 06/08/2012
The value of EG_y in MR version 03.1 section D.2 is 180,722.52 (175318, deducted 5%). As per revised PDD, PPs decided to discount 0.5% of EG_y monitored by electricity meter with accuracy 0.5 for conservation. The reported deduction method is inconsistent with the revised PDD and the reported value is inconsistent with the assessment team verified results. CAR#12 is therefore raised by the assessment team.
Project Participant Response: **Date:** 08/08/2012

The value of EG_y in section D.2, MR version 03.1 is reported incorrectly. Actual electricity generation monitored during this monitoring period is 180,722.52MWh, and according to the approved revised PDD, 0.5%of electricity generation would be discounted for conservation. So EG_y with discount should be 179,818.91MWh. It is consistent with the value in the ER calculation spreadsheet. Value of EG_y has been corrected in the updated MR.
Documentation Provided as Evidence by Project Participant:
Updated Monitoring report Version 4.0 dated 08/08/2012
Information Verified by Lead Assessor:
Updated Monitoring Report Version 4.0 dated 08/08/2012 ER calculation spreadsheet Version 4.0 dated 08/08/2012
Reasoning for not Acceptance or Acceptance and Close Out:
PP clarified that information reported in the MR version 03.1 section D is incorrect, relevant revision has been made based on the ER calculation spreadsheet. As per the RMP, 0.5% of delivered electricity has been deducted from the measured results. The final reported value is 179,818.91MWh. CAR#12 is therefore closed by the assessment team.

Acceptance and Close out by Lead Assessor: **Lenore Yin**	**Date:** 08/08/2012

Date:	06/08/2012		Raised by:	Members of the assessment team	
Type:	CAR	Number:	CAR #13	Reference:	AU4 Section 3

Lead Assessor Comment:	**Date:** 06/08/2012
As per information and reporting checklist version 2.0, the monitoring report shall contain information on calibration of monitoring instruments (frequency, relevant dates of calibration and validity) as specified by the monitoring methodology and the monitoring plan. CAR#13 is therefore raised considering the information of calibration frequency for seven meters installed on the collection stations are not included in the monitoring report.	
Project Participant Response:	**Date:** 08/08/2012
As per Section 5.2.2 of the National Metrological Calibration Regulation for Electrical Energy Meters with electronics (JJG 596-1999), electrical energy meters would be calibrated once every 5 years. For this project, seven meters installed on the collection stations have been calibrated once at least every 5 years. Therefore, the frequency should be in line with the national standard during this monitoring period. Information of calibration frequency for these meters has been revised in the updated monitoring report.	
Documentation Provided as Evidence by Project Participant:	
Updated Monitoring report version 4.0 dated 08/08/2012 National Metrological Calibration regulation for Electrical Energy Meters with electronics (JJG 596-1999)	
Information Verified by Lead Assessor:	
Updated Monitoring report version 4.0 dated 08/08/2012 National Metrological Calibration regulation for Electrical Energy Meters with electronics (JJG 596-1999) Revised monitoring plan in the revised PDD version 7 dated 02/10/2011	
Reasoning for not Acceptance or Acceptance and Close Out:	
Based on the clarification provided by the PP the assessment team confirmed that the calibration frequency for seven meters installed at the collection stations is in line with national standards JJG 596-1999 and in compliance with the revised monitoring plan. Information presented in the updated MR has been confirmed to be correct. CAR#13 is therefore closed by the assessment team.	

Acceptance and Close out by Lead Assessor: **Lenore Yin**	**Date:** 08/08/2012

Date:	06/08/2012		Raised by:	Members of the assessment team	
Type:	CAR	Number:	CAR #14	Reference:	AU4 Section 3

Lead Assessor Comment:	**Date:** 06/08/2012
In section E.2 of MR, formula (5), it is reported that the CO2 emissions factor from fuel used for transportation is fixed in PDD as 1.011kgCO2/km. The assessment team considered that this description is inconsistent with the approved revised monitoring plan. Please kindly check and make relevant revision if necessary. CAR#14 is therefore raised by the assessment team.	
Project Participant Response:	**Date:** 08/08/2012
As per the approved revised PDD, $EF_{km,CO2,y}$ is a parameter monitored, and IPCC 2006 default value from the Moderate Control index for the US Duty diesel Vehicle is used. This parameter would be updated according to IPCC latest version. The relevant description in section E.2 of MR has been revised.	
Documentation Provided as Evidence by Project Participant:	
Updated Monitoring report version 4.0 dated 08/08/2012	
Information Verified by Lead Assessor:	
Updated Monitoring report version 4.0 dated 08/08/2012 Revised monitoring plan in the revised PDD version 7 dated 02/10/2011	
Reasoning for not Acceptance or Acceptance and Close Out:	
Relevant revision has been made in the final version of MR to ensure the information consistency. CAR#14 is therefore closed by the assessment team.	
Acceptance and Close out by Lead Assessor: **Lenore Yin**	**Date:** 08/08/2012

Date:	06/08/2012		Raised by:	Members of the assessment team	
Type:	CAR	Number:	CAR #15	Reference:	AU4 Section 3
Lead Assessor Comment:			**Date:** 06/08/2012		
Through document review, the assessment team identified that reported values for parameter $BF_{k,y}$ in monitoring report version 03.1 section E Table 7 are inconsistent with the assessment verified results and the calculation results presented in the ER spreadsheet. CAR#15 is therefore raised by the assessment team.					
Project Participant Response:			**Date:** 08/08/2012		
Incorrect values for $BF_{k,y}$ in MR version 03.1 section E Table 7 have been revised in updated MR.					
Documentation Provided as Evidence by Project Participant:					
Updated Monitoring report version 4.0 dated 08/08/2012					
Information Verified by Lead Assessor:					
Updated Monitoring report version 4.0 dated 08/08/2012 ER calculation spreadsheet version 4.0 dated 08/08/2012					
Reasoning for not Acceptance or Acceptance and Close Out:					
PP clarified that reported values are incorrect and relevant revision has been made based on the ER calculation spreadsheet. The assessment team verified that reported values in Table 7 in the final version of MR are correct CAR#15 is therefore closed.					
Acceptance and Close out by Lead Assessor: **Lenore Yin**			**Date:** 08/08/2012		

10. Statement of Competence

Statement of Competence

Name: Lenore Yin

Status

-	Lead Assessor	x	-	Expert	x
-	Assessor	x	-	Financial Expert	
-	Local Assessor	China	-	Technical Reviewer	

Scopes of Expertise

1. Energy Industries (renewable / non-renewable)	x
*Techinical area(s):*TA 1.2 Energy generation from renewable energy sources	
2. Energy Distribution	
Techinical area(s):	
3. Energy Demand	
Techinical area(s):	
4. Manufacturing	
Techinical area(s):	
5. Chemical Industry	
Techinical area(s):	
6. Construction	
Techinical area(s):	
7. Transport	
Techinical area(s):	
8. Mining/Mineral Production	
Techinical area(s):	
9. Metal Production	
Techinical area(s):	
10. Fugitive Emissions from Fuels (solid, oil and gas)	
Techinical area(s):	
11. Fugitive Emissions from Production and Consumption of Halocarbons and Sulphur Hexafluoride	
Techinical area(s):	
12. Solvent Use	
Techinical area(s):	
13. Waste Handling and Disposal	
Techinical area(s):	
14. Afforestation and Reforestation	
Techinical area(s):	
15. Agriculture	
Techinical area(s):	

Approved Member of Staff by: Siddharth Yadav Date: 06/02/2012

Statement of Competence

Name: Yi Liao

Status

-	Lead Assessor	x	-	Expert	x
-	Assessor	x	-	Financial Expert	
-	Local Assessor	China	-	Technical Reviewer	

Scopes of Expertise

1. Energy Industries (renewable / non-renewable)	**x**
Technical Area(s): TA 1.1 Thermal energy generation from fossil fuels and biomass including thermal electricity from solar TA 1.2 Energy generation from renewable energy sources	
2. Energy Distribution	
Technical Area(s):	
3. Energy Demand	
Technical Area(s):	
4. Manufacturing	
Technical Area(s):	
5. Chemical Industry	
Technical Area(s):	
6. Construction	
Technical Area(s):	
7. Transport	
Technical Area(s):	
8. Mining/Mineral Production	
Technical Area(s):	
9. Metal Production	
Technical Area(s):	
10. Fugitive Emissions from Fuels (solid, oil and gas)	
Technical Area(s):	
11. Fugitive Emissions from Production and Consumption of Halocarbons and Sulphur Hexafluoride	
Technical Area(s):	
12. Solvent Use	
Technical Area(s):	
13. Waste Handling and Disposal	**x**
Technical Area(s): TA 13.1: Waste handling and disposal	
14. Afforestation and Reforestation	
Technical Area(s):	
15. Agriculture	
Technical Area(s):	

Approved Member of Staff by: Siddharth Yadav Date: 15/02/2012

Statement of Competence

Name: Tracy Zheng

Status

-Lead Assessor	x	-Expert	x
-Assessor	x	-Financial Expert	
-Local Assessor	China	-Technical Reviewer	

Scopes of Expertise

1. Energy Industries (renewable / non-renewable)	**x**
Technical Area(s): TA 1.2 Energy generation from renewable energy sources	
2. Energy Distribution	
Technical Area(s):	
3. Energy Demand	
Technical Area(s):	
4. Manufacturing	
Technical Area(s):	
5. Chemical Industry	
Technical Area(s):	
6. Construction	
Technical Area(s):	
7. Transport	
Technical Area(s):	
8. Mining/Mineral Production	
Technical Area(s):	
9. Metal Production	
Technical Area(s):	
10. Fugitive Emissions from Fuels (solid, oil and gas)	
Technical Area(s):	
11. Fugitive Emissions from Production and Consumption of Halocarbons and Sulphur Hexafluoride	
Technical Area(s):	
12. Solvent Use	
Technical Area(s):	
13. Waste Handling and Disposal	
Technical Area(s):	
14. Afforestation and Reforestation	
Technical Area(s):	
15. Agriculture	
Technical Area(s):	

Approved Member of Staff by: Siddharth Yadav Date: 25/04/2012

Statement of Competence

Name: Linda Hu

Status

-	Lead Assessor	x	-	Expert	x
-	Assessor	x	-	Financial Expert	
-	Local Assessor	China	-	Technical Reviewer	x

Scopes of Expertise

16. Energy Industries (renewable / non-renewable)	**x**
Technical Area(s*): TA 1.2 Energy generation from renewable energy sources*	
17. Energy Distribution	
Technical Area(s*):*	
18. Energy Demand	
Technical Area(s*):*	
19. Manufacturing	
Technical Area(s*):*	
5. Chemical Industry	
Technical Area(s*):*	
6. Construction	
Technical Area(s*):*	
7. Transport	
Technical Area(s*):*	
8. Mining/Mineral Production	
Technical Area(s*):*	
9. Metal Production	
Technical Area(s*):*	
10. Fugitive Emissions from Fuels (solid, oil and gas)	
Technical Area(s*):*	
11. Fugitive Emissions from Production and Consumption of Halocarbons and Sulphur Hexafluoride	**x**
Technical Area(s*):TA 11.2 GHG capture and destruction*	
12. Solvent Use	
Technical Area(s*):*	
13. Waste Handling and Disposal	
Technical Area(s*):*	
14. Afforestation and Reforestation	
Technical Area(s*):*	
15. Agriculture	
Technical Area(s*):*	

Approved Member of Staff by: Siddharth Yadav Date: 06/02/2012

Statement of Competence

Name: Jumson Fu

Status

-	Lead Assessor		-	Expert	x
-	Assessor		-	Financial Expert	
-	Local Assessor		-	Technical Reviewer	

Scopes of Expertise

1. Energy Industries (renewable / non-renewable)	x
Techinical area(s): TA 1.1 Thermal energy generation from fossil fuels and biomass including thermal electricity from solar.	
2. Energy Distribution	
Techinical area(s):	
3. Energy Demand	
Techinical area(s):	
4. Manufacturing	
Techinical area(s):	
5. Chemical Industry	
Techinical area(s):	
6. Construction	
Techinical area(s):	
7. Transport	
Techinical area(s):	
8. Mining/Mineral Production	
Techinical area(s):	
9. Metal Production	
Techinical area(s):	
10. Fugitive Emissions from Fuels (solid, oil and gas)	
Techinical area(s):	
11. Fugitive Emissions from Production and Consumption of Halocarbons and Sulphur Hexafluoride	
Techinical area(s):	
12. Solvent Use	
Techinical area(s):	
13. Waste Handling and Disposal	
Techinical area(s):	
14. Afforestation and Reforestation	
Techinical area(s):	
15. Agriculture	
Techinical area(s):	

Approved Member of Staff by: Siddharth Yadav Date: 15/02/2012

11. Photographic Evidence

Note: Photos were taken during the second onsite visit, due to the restricted conditions of the project site, the photos of monitoring equipments: Main Meter, Electricity meters installed in the collection site and flow meter are unable to be taken. The following sections only present the photographic evidence for Electric Truck Scales, Calorimeter and Moisture Analyzer.

Unique reference number: 20061206
Name of equipment: Electric truck scale (East weight house)

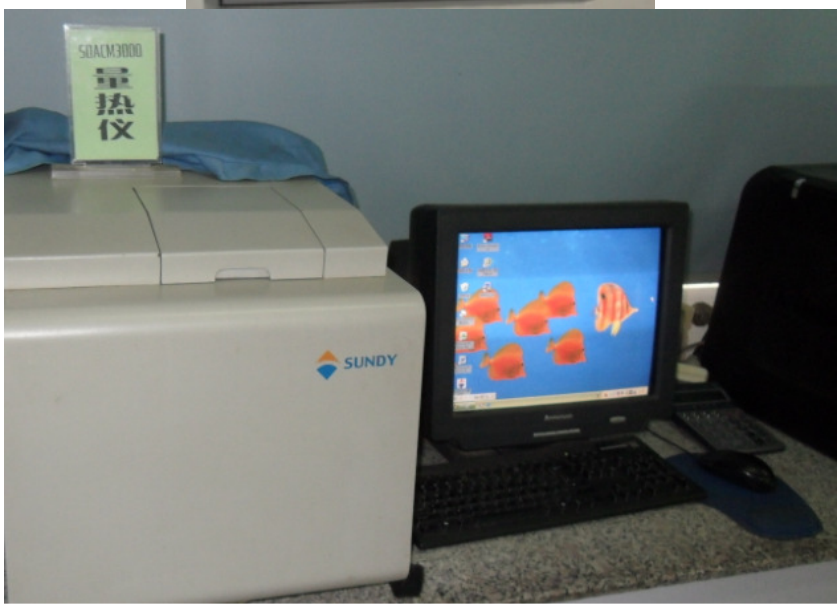
Parameter: $BF_{k,y}$
Date: 15/08/2011

Unique reference number: 20070701
Name of equipment: Electric truck scale (West weight house)

Parameter: $BF_{k,y}$
Date: 15/08/2011

Unique reference number: 1406128
Name of equipment: Calorimeter

Parameter: NCV_k
Date: 15/08/2011



Unique reference number: 3506073
Name of equipment: Moisture Analyzer

Parameter: Moisture content
Date: 15/08/2011


Galanz
SUNDY


SUNDY 水分测试仪
MC 湘制01000006
产品型号 SDTGA 300
出厂编号 3506073
出厂日期 2006年10月
电源电压 220V/50Hz
最大功率 1.5kW
服务电话 0731-8818337
8812697
800-878-6308
长沙三德实业有限公司

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