CDM Verification and Certification Report

Methane Extraction and Fuel Conservation Project at Tamil Nadu Newsprint and Paper Limited (TNPL), Kagathipiuram, Karur District Tamil Nadu Project Ref. no. 0124

Period:

1st January 2006 to 31st December 2006

CDM.VER0019
Date: 14th August, 2007

Verification and Certification Report of Methane Extraction and Fuel Conservation Project

Summary

1.1 SGS United Kingdom Ltd has verified the implementation of the monitoring plan in the registered project number 0124 and the application of the monitoring methodology AM0013 version 2: Forced methane extraction from organic wastewater treatment plants for grid-connected electricity supply and / or heat production.

1.2 This report presents the results of the second periodic verification assessment. A site visit was carried out on February 14, 2007 to verify the data collected during the period: 1st January, 2006 to 31st December, 2006.

2 Introduction

SGS United Kingdom Ltd was contracted by **Tamil Nadu Newsprint and Papers Ltd** to perform the second periodic verification of 'Methane Extraction and Fuel Conservation Project at Tamil Nadu Newsprint and Paper Limited (TNPL), Kagathipuram, Karur District, Tamil Nadu". This report covers the monitoring period from 1st January, 2006 to 31 December, 2006. This report presents the findings of the second periodic assessment and provides justification for the verification process and the verification and certification opinion.

3 Objectives

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

- The emissions report conforms with the requirements of the monitoring plan in the registered PDD and the approved methodology; and
- The data reported are accurate, complete, consistent, transparent and free of material error or omission.

4 Scope

This engagement covers verification of emission reductions from anthropogenic sources of greenhouse gases included within the project boundary of the 'Methane Extraction and Fuel Conservation Project" (registered with ref no. 0124) during the period from 1st January, 2006 to 31st December, 2006.

5 Verification Team

Team leader: S Shetty
Local Assessors: J Nair
Technical reviewer: Irma Lubrecht

6 Itinerary

The assessor performed a site visit on 14 February 2007 for Second periodic verification. The site visit was used to review records held at the project office (e.g. training and personnel records; procedural manuals; monitoring records), interview staff, review procedures and the implementation of these procedures, confirm data collection and handling procedures and verify emission reductions. Additional time was spent offsite for document and records review.

7 Verification process

7.1 Summary

The verification process is a two-stage process.

In the first stage, SGS completed a strategic review and risk assessment of 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;
- 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 periodic verification protocol.
- Corrective Action Requests and New Information Requests, if necessary.

In the second stage, SGS verified the implementation of the monitoring plan and the data presented in the Monitoring Report for the period in question, using the Periodic Verification Checklist. This involved site visit and a desk review of the monitoring report.

At the end of this stage, SGS produced this verification report which will form the basis of any future requests to the CDM EB.

8 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?

> *The calculation in the monitoring report was done using Baseline methane emission ex-ante for calculating methane emission from bio-digester. IPCC guidelines specify physical leakage from anaerobic digesters as being 15% of total biogas production. A Corrective Action Request (CAR) was raised and the monitoring report and the spread sheet were resubmitted after incorporating necessary corrections.*

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, the on-site inspections have been performed. Interviews are undertaken, data were collected & checked, audited the implementation procedure, and*

checked the calibration certificates. The results of the site visit are recorded in the verification checklist which is used as an internal report only. Documentary evidences have been collected.

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

The external data like conversion factor for Methane has been used which are taken from the IPCC guidelines. The maximum methane producing capacity is an IPCC COD-default factor for Bo (0.25 kg CH4/kg COD Page 5.20 IPCC Good Practice Guidance and Uncertainty Management in National Greenhouse Gas Inventories). The methane conversion factor 0.738 is an IPCC default factor (Revised 1996 IPCC Good Practice Guidance and Uncertainty Management in National Greenhouse Gas Inventories Reference Manual Table 6-8. As suggested in methodology Energy content of the pure methane is 39730 kj/Nm^3 (biomass for Renewable Energy, Fuels and Chemical (ed. D.L Klass) Academic press, London, UK. Page 276 Table 9.2) which is equal to 9489 k cal. As conservative measure 9000 k cal has been used for calculation.

The captive emission factor 1.25tCO2/MWh was verified with the captive power plant data for the year 2006 during site visit. The emission factor calculation spread sheet is attached with this report.

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.

The aspects of the monitoring plan were implemented correctly. The supporting references and data were complete and transparent. The emission reduction calculation has been checked and CAR/NIRs were raised for more clarification and corrections and the report was used as an internal report only. The same was found incorporated in revised monitoring report.

The date of project registration and the web link given in Monitoring Report (MR) were not correct. Through CAR 1 a request was made to correct the project registration date and the web link. In the revised MR due corrections were made by the project proponent and resubmitted for verification. This was checked and found OK. Hence this was accepted and CAR 1 was closed out.

Information on roles and responsibilities for the project activities were not furnished in the MR. To this issue NIR 2 was raised. The project developer incorporated roles and responsibility for the project activity in the revised MR. The revised MR submitted to verifier was checked and was found to be in line with that practiced at site and the feed back obtained from the interviews conducted during site visit. Hence NIR 2 was closed out.

Baseline methane emission ex-ante was used for calculating methane emission from bio-digester. IPCC guidelines specify physical leakage from anaerobic digesters as being 15% of total biogas production. To this issue CAR 3 was raise. The project developer had used the baseline methane emission ex-ante value in place of actual gas production from the digester to calculate the

leakage from bio-digester and project emission. Project proponent rectified the error made while calculating the project emission from the bio-digester and now in the revised spread sheet has used the actual biogas production to calculate Ex-post Baseline Methane Emissions (BECH4ex-post) and this has been used to calculate 15% leakage from the bio-digester. The revised MR was checked and found OK. Hence CAR 3 was closed out.

Error to decimal level with respect to figures in excels sheet and verified log sheet for COD outlet parameter were observed. To this issue CAR 4 was raised. COD analyses were carried out once in each shift and the final COD figure was the average of the three shifts. The average COD values had figure to decimal level. This was rounded off to the higher whole number in the excel sheet whereas the log sheet showed it to be as lower side whole number. Project developer rectified the error and carried out correction to these values to the lower whole number in the revised MR & excel sheet. This was checked and no discrepancy exist with the log sheet values and figures in the excel sheet. Hence CAR 4 was closed out.

Have any recommendations for changes to the monitoring methodology for any future crediting period been issued to the project participant? If yes, please detail.

No, the plant has already implemented correct monitoring methodology and following the same in the second monitoring period.

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. The estimated emission reduction in the registered PDD was **35966** tCO2 for the second monitoring period as per estimation made in the PDD. The reported emission reduction as per second monitoring period was **35469** tCO2. The actual emission reduction has been verified as **33435** tCO2 for the same period.*

*The ex-ante estimation was **33435** tCO2e*
*The ex-post estimate was **46348.01 tCO2e***

*Hence as per the methodology the lowest should be considered which is equal to **33435** tCO2e.*

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 concerns were identified.

Post monitoring report on UNFCCC website

Yes, the monitoring report is available at ref. no 0124 on UNFCCC website
http://cdm.unfccc.int/Issuance/MonitoringReports
http://cdm.unfccc.int/Projects/DB/DNV-CUK1131389672.69/Monitoring/SGS-UKL1170775381.79/report

8.1 Confirmation of data verified

Reporting periods: 1st January 2006 to 31st December 2006

Monitoring period	PDD estimated value	Reported value	Verified value
1st January 2006 to 31st December 2006	***35966***	***35469***	***33435***

9 Conclusion on data quality and decision on materiality

Compliance:
Considering that the monitoring report is considered in compliance with the approved monitoring methodology and with the Project Design Document registered.

Data:
The data presented in the revised monitoring report and the emission reductions determined from that data are considered to be complete, transparent and free of material error or omission.

10 Recommendation

The Verification Lead Assessor recommends that SGS United Kingdom Ltd issue a verification and certification opinion.

Name and reference number of project	Methane Extraction and Fuel Conservation Project of TNPL Ltd UNFCCC Ref No. 0124 SGS Ref. No. CDM.VER0019
Scope of Verification	This scope of this engagement covers the verification and certification of greenhouse gas emission reductions in accordance with section I of Decision 17/CP7, and relevant decisions of the CDM EB and COP/MOP.
Total GHG emission reductions verified	***33435*** tCO_2e
Registered PDD and Approved Methodology used for Verification	Registered PDD with ref. No.0124 and approved consolidated methodology AM0013 version 02: Forced methane extraction from organic wastewater treatment plants for grid-connected electricity supply and / or heat production.
Verification Opinion with regard to data quality and materiality	The data are considered to be complete, transparent and free of material error or omission.
Applicable period	1st January 2006 to 31st December 2006

Dated and signed on behalf of the verification body by authorized signatory	14-08-2007 

Annexs:

Key reference documents:

- Registered PDD for 0124 project
- TNPL Second Monitoring Report
- ER excel calculation sheet
- Revised TNPL second monitoring report
- Revised ER Excel Calculation Sheet
- Captive emission factor calculation sheet

Persons interviewed:

Person interviewed	**Position in CDM Project**	**Organization**	**Remarks**
Mahesh Kumar	Project Consultant	E&Y	E&Y
Dr. Chinnaraj	Dy Manager (R&D)	TNPL	TNPL
S Ramakrishan Iyer	Chief Manager (Environment)	TNPL	TNPL
Ravi	Dy. Manager (Environment)	TNPL	TNPL
Elangovan	Dy. Manager (Environment)	TNPL	TNPL
Shinde	Manager Laboratory	TNPL (Contractor – Global Environment Engg. Ltd)	TNPL ETP contractor
Ganesan	Chemist (Laboratory)	TNPL (Contractor – Global Environment Engg. Ltd)	TNPL ETP contractor