CDM Verification and Certification Report for The Godavari Sugar Mills Ltd. (TGSML)'s 24 MW Bagasse based Co-generation Power project at Sameerwadi.

Project Ref. No. 0577

Period:
12th April 2002 to 31st March 2007

Date: 02nd November 2007

Verification and Certification Report on The Godavari Sugar Mills Ltd. (TGSML)'s 24 MW Bagasse based Co-generation Power project at Sameerwadi

1 Summary

1.1 SGS United Kingdom Ltd has verified the implementation of the monitoring plan in the registered project number 0577 and the application of the consolidated monitoring methodology ACM0006 version 03 dated 19th May 2006.

1.2 This report presents the results of the first periodic verification assessment. A site visit was carried out on June 7 – 8, 2007 and on August 28, 2007 to verify the data collected during the period: 12th April 2002 to 31st March 2007.

2 Introduction

SGS United Kingdom Ltd was contracted by The Godavari sugar Mills Ltd. (A company of Somaiya Group) to perform the first periodic verification of 'The Godavari Sugar Mills Ltd. (TGSML)'s 24 MW Bagasse based Co-generation Power project at Sameerwadi'. This report covers the monitoring period from 12th April 2002 to 31st March 2007.

This report presents the findings of the first 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 'The Godavari Sugar Mills Ltd. (TGSML)'s 24 MW Bagasse based Co-generation Power project at Sameerwadi' (registered with ref no. 0577) during the period from 12th April 2002 to 31st March 2007.

5 Verification Team

Team leader: Sanjeev Kumar
Assessor: Vikrant Badve
Technical reviewer: Siddharth Yadav

6 Itinerary

The assessor performed a site visit on June 7-8, 2007 and on August 28, 2007. The site visit was used to review records held at the project activity site as per the monitoring plan of the registered PDD, interview the staff regarding the monitoring practice used for the project activity, review procedures and the implementation of these procedures, confirm data collection, archiving 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?

Yes, the project is in accordance with the requirement of the registered PDD.

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 site visit for the project was conducted on 7th – 8th June and on 28th August 2007 to check whether project proponent is following the monitoring plan mentioned in the registered PDD or not, to check the calibration procedure followed for calibration of equipments used for data monitoring and data archiving procedure . The results of the site visit are recorded in the verification checklist which is used as an internal report only. The evidences have been collected for the same. The revised monitoring report version 2 is attached with this verification report.

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

Yes, the grid emission factor from CEA (Central Electricity Authority), Ministry of Power, Govt. of India database version 1.1 dated 21st December 2006 and IPCC guidelines 2006 were used as an additional source of information.
The grid emission factor was referred from the CEA database version 1.1. CEA has calculated grid emission factor as per the guidelines given in ACM0002 version 6. Thus it was verified that the grid emission factor for the project activity is ex-post calculated which is inline with the Registered PDD and monitoring plan for the project activity; hence found acceptable. IPCC guidelines 2006 were used to refer average emission factor for biomass transportation with trucks and to refer the emission factor for the fossil fuel i.e. coal fired in the project activity.

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.

During site visits it was confirmed that the aspects of the monitoring plan mentioned in the registered PDD were implemented correctly. The supporting references and data were complete and transparent. The emission reduction calculation given in the excel spreadsheet 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 version 2.

The Monitoring report version 1 refers to the PDD version 4 dated 26th March 2007 but when referred to UNFCCC web-site it was found that the project activity was registered with PDD version 3 dated 5th December 2006. CAR1 was raised and Project proponent was asked to correct the referred PDD version and date. In response to the same project proponent accepted the mistake and corrected. Monitoring report version 2 now refers to PDD version 3 dated 5th December 2006. This was found acceptable after cross checking with the UNFCCC web-site and CAR 1 is closed.

CAR 2 was raised as the monitoring report version 1 did not mention version and date of the monitoring report. Project proponent has corrected this in revised monitoring report. CAR 2 was closed as monitoring report version 2 mentions details like version and date of monitoring report.

When monitoring report version 1 was cross-checked with the registered PDD it was found that there is difference in the emission reductions for the years 2002-03, 2003-04, 2004-05, 2005-06 and 2006-07 even though the project was registered on 4th May 2007. CAR 3 was raised and a clarification was asked from project proponent. In response to this CAR project proponent mentioned that the as per methodology ACM 0006 version 3 baseline emissions have to be calculated based on the net increased power generation at the project site. But the emission reductions mentioned in the registered PDD was estimated based on the gross increase in the energy generation. This was corrected during the preparation of the monitoring report and net increase in the electricity was considered while calculating the emission reductions; hence

resulting in lesser emission reduction value. The net electricity generation values mentioned in the monitoring report version 2 were actual values taken from the plant and same was verified during the verification site visit.

While checking the excel spreadsheet giving the emission reduction calculations for the project activity it was found that the project proponent has used incorrect conversion factor for kCal to J.CAR 4 was raised for this. In response to CAR 4 project proponent corrected the conversion factor used in the excel spreadsheet. This was checked with the revised excel spreadsheet and found acceptable. On account of this change emission reductions were decreased from 170,270 to 170,103. This was found acceptable after checking with the revised version 2 of monitoring report and excel spreadsheet.

CAR 5 was raised as there was a mismatch in the start date of crediting period. The monitoring report version 1 mentions 1st April 2002 as starting date for crediting period but as per registered PDD 12th April 2002 would be starting date. Project proponent was asked to mention the correct start date of crediting period in the monitoring report. In response to CAR 5 project proponent corrected the start date of crediting period as 12th April 2002. The monitoring report version 2 mentions crediting period start date as 12th April 2002 and same is acceptable. It was also checked that the emission reduction spreadsheet does not take any data from 1st April 2002 to 12th April 2002.

NIR 6 was raised as in Appendix 3 of monitoring report version 1 it was mentioned that Net electricity generation was calculated as a difference of gross electricity generated and auxiliary consumption. But the monitoring plan in registered PDD and monitoring report mentions that Net electricity generation will be measured. In response to NIR 6 project proponent mentioned that the Net electricity generation is measured in the DCS (Distributed Control System) and same time as per the registered PDD QA/QC this was cross checked with sales receipt and plant generation. The formula mentioned in the Appendix 3 of monitoring report refers to the power balance.

It was checked during the site visit that the plant maintains a daily record of gross power generation, export to grid and net power generation through DCS which was archived every month. With DCS records plant maintains record of sales receipts of the net amount of electricity exported to the grid and imported from grid; which is measured by using electricity meters on supply side and record of internal usage like usage in sugar plant and Chemical (SOC) plant. The plant is having electricity meters on generation side (property of project proponent) as well as on supply side (property of state electricity board). State electricity board does not allow to hook DCS to supply side meters hence project proponent has hooked DCS to the generation side meters used to measure the gross electricity, export to grid and internal usage like usage in sugar plant and Chemical (SOC) plant. Plant maintains record calculated value Net electricity generation which was calculated using power balance formula; project proponent has taken net import and net export figures from supply side meters and internal usage from generation side meters. The Net electricity generation measured with DCS is cross-checked with the Net electricity generation calculated using the power balance formula. It was found that the calculated value of Net electricity generation is conservative with respect to measured value of Net electivity generation. This is because of the step up

transformer used to increase the voltage of generated electricity to meet the supply or grid requirement.

The DCS records, plant generation records and sales receipt records were checked during verification site visit and found acceptable. As per the registered PDD monitoring plan project proponent is measuring the net electricity on generation side and also as per QA/QC mentioned in registered PDD measured value of Net electricity is cross checked with the plant records of calculated Net electricity value. Since the later one is on conservative site same was accepted for emission reduction calculations. NIR 6 was closed.

Electricity meters at supply and generation side were calibrated annually. This was checked during site visit and a copy of calibration record was submitted by the project proponent. The calibration records were found acceptable when checked with the procedure set by the plant.

It was observed in the monitoring report version 1 that the parameter ' fuel consumption for transportation of biomass' is not mentioned in monitoring report version 1 which is part of monitoring plan as per registered PDD. NIR 7 is raised for this. The project proponent in response to this NIR mentioned that they have opted for option 1as per approved methodology for calculating the emissions from biomass transportation. In revised monitoring report version 2 project proponent has mentioned this data as zero since the transportation trucks were owned by a private contractor and it is not possible to monitor the fuel consumption for these trucks. The same will be monitored when project proponent have there own truck for transportation. This was accepted as the transport emissions were already calculated using option 1. NIR 7 was closed.

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 first monitoring period from 12th April 2002 to 31st March 2007.

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 ***170103*** *tCO_2 for the monitoring period of 12th April 2002 to 31st March 2007.*

The actual emission reduction has been verified as 170103 tCO_2e for the same monitoring period.

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 0577 on UNFCCC website at following web-links
http://cdm.unfccc.int/Issuance/MonitoringReports/index.html?p=14 and
http://cdm.unfccc.int/Projects/DB/BVQI1157372507.15/view.html

8.1 Confirmation of data verified

Reporting periods: 12th April 2002 to 31st March 2007.

Emission Reduction Period	Reported Value tCO_2	Verified Value tCO_2
2002-03	9071	9071
2003-04	81127	81127
2004-05	30205	30195
2005-06	-4849	-5004
2006-07	54716	54713
Total	**170270**	**170103**

9 Conclusion on data quality and decision on materiality

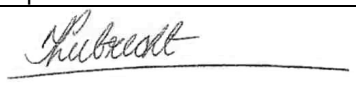
Compliance:
Considering that the monitoring report is considered in compliance with the approved monitoring methodology and with the Project Design Document registered.

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	The Godavari Sugar Mills Ltd. (TGSML)'s 24 MW Bagasse based Co-generation Power project at Sameerwadi UNFCCC Ref. No. **0577** SGS Ref. No. CDM.VER0168
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	170,103 tCO_2e
Registered PDD and Approved Methodology used for Verification	Registered PDD with ref. no.0577 and approved consolidated monitoring methodology ACM0006 version 03 dated 19th May 2006.
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	12th April 2002 to 31st March 2007
Dated and signed on behalf of the verification body by authorized signatory	 02/11/2007

Annexs:

Key reference documents:

- Registered PDD for 0577 project
- Approved consolidated monitoring methodology ACM0006 version 03 dated 19th May 2006
- Monitoring Report (CDM registration reference number: 0577) for monitoring period: 12th April 2002 to 31st March 2007 (*http://cdm.unfccc.int/Issuance/MonitoringReports/index.html?p=14*)
- Revised monitoring report version 02 dated 30th August 2007

Other documents provided by the Client:

References and its significance:

Ref No.	Document	Description
01	Co-gen yearly reports for 2002-03 to 2006-07	Yearly power generation and consumption details and fuel consumption details are checked with this document.
02	Month-wise Power generation data from 1999-2000 to 2006-2007	Month-wise power generated at the project activity site was checked with this document.
03	DCS reports and screen shot of DCS	Data monitoring parameters by DCS
04	Bagasse consumption details	Bagasse consumption details for monitoring period.
05	SAP report for the fuel consumption for biomass transportation	Transport emissions
06	Average truck load records	Transport emissions
07	Return trip distance for biomass transportation	Transport emissions
08	Sample copy of log-book	Monitoring procedure adopted by project proponent.
09	Consent to operate for the sugar plant for 2006-	NOC from state pollution control board.

	07	
10	Boiler Inspector Certificate	NOC from state Boiler Inspector.
11	Calibration record for Electricity meters	Calibration details for Electricity monitoring meters.
12	Test report for GCV for Coal and bagasse	Monitoring procedure adopted by project proponent.
13	Calibration report for thermometer and bomb calorimeter	Calibration details for Bomb calorimeter and for thermometer.
14	Bagasse purchase from outside source	Monitoring procedure adopted by project proponent.

Person interviewed	**Position in CDM Project**	**Organization**	**Remarks**
Mr. Gangadhar Gauda	Deputy General Manager (Co-gen)	The Godavari Sugar Mills Ltd.	Project Proponent
Mr. Prakash Tiwari	Asst. Manager (Co-gen)	The Godavari Sugar Mills Ltd.	Project Proponent
Mr. Surendra Singh	Chief Technical Officer	The Godavari Sugar Mills Ltd.	Project Proponent