



**The World Bank
Carbon Finance Unit**

Determination on Monitoring Report
- for Year 2008 -

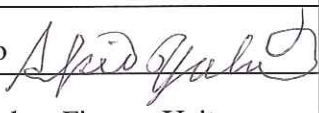
**Fifth Periodic Determination on
Monitoring
of
Bulgaria Svilosa Biomass Project**

June 4, 2009

JCI CDM Center

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Summary:

After the desk review for the monitoring report 2008 prepared by Svilocell Company which was submitted to JCI on January 30, 2009, JCI Assessment Team has done the on-site assessment of 5th periodic determination on monitoring at Svilosa Site, Bulgaria during March 18 to March 20, 2009 for the Bulgaria Svilosa Biomass Project.

The summary of the 5th Periodic Determination on Monitoring through the on-site assessment are shown below and detailed in this report and the attachments.

1. It was confirmed that there are no remaining CARs, CLARs and FARs, which have been addressed in the previous determination on monitoring reports.
2. Total Project Emissions reductions (tonnes CO₂e) :
Project Emissions reductions, amount **45,959 ton CO₂e** was verified appropriately for the period of January, 2008 to December, 2008 which is requested in the summary sheet of the Workbook of the monitoring report.
3. Three (3) CARs and one (1) OBS were addressed as the findings through the 5th Periodic Determination on Monitoring. They were resolved appropriately and they are shown in Annex 1.

Report No.: JCI-CDM-DOM-07/017	Subject Group:
Report title: 5 th Periodic Determination on Monitoring of the Bulgaria Svilosa Biomass Project	
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Indexing terms

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Abbreviations

CAR	Corrective Action Request
CDM	Clean Development Mechanism
CFU	Carbon Finance Unit, World Bank
EMS	Environment Management Plan
ER	Emission Reduction
ERU	Emission Reduction Unit
ERPA	Emission Reductions Purchase Agreement
FAR	Forward Action Request
GHG	Green House Gas
IE	Independent Entity
IETA	International Emission Trading Association
JCI	Japan Consulting Institute
JI	Joint Implementation
MMS	Management and Monitoring System
MP	Monitoring Plan
OBS	Observation
PDD	Project Design Document
PT	Performance Test
QA	Quality Assurance
QC	Quality Control
SPS	Svilosa Power Station AD (CHPP)
TOR	Terms of Reference
UNFCCC	United Nations Framework Convention for Climate Change

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Annex 1: 5th Periodic Determination on Monitoring Checklist

Annex 2: Summary of On-site Assessment

1) Summary of On-site Assessment

2) Main Documents / Data List obtained during the On-site Assessment

Annex 3: CAR and Clearance Report

Annex 4: Annual Report (2008)

Annex 5: Excel Worksheet (2008)

1 INTRODUCTION

As a Applicant Independent Entity (AIE), Japan Consulting Institute (JCI) performed the 5th Periodic Determination on Monitoring of Bulgaria Svilosa Biomass Project receiving an order from CFU for the execution of two times Periodic Determination on Monitoring on the project. This 5th Periodic Determination on Monitoring is performed on the basis of TOR of CFU and currently valid conditions of CDM / JI stated in Kyoto Protocol, Marrakech Accords and the decisions of JI Supervisory Committee.

Determination on monitoring Team

Team Leader	:	SATO Hideyuki
Team Member	:	OKADA Masaki
Team Member	:	Vldamir Kanev
Local Expert	:	Todor Georgiev Donchev

1.1 Objective

Objective of the 5th Periodic Determination on Monitoring is to review and verify whether all the project activities are implemented as planned, i.e., all the physical features of the project including monitoring system are in place and fully functional, project has been operated smoothly without any serious trouble, monitoring of the data has been carried out fairly and the GHG data of high quality have been collected and reported as originally planned through the period of January, 2008 to December, 2008 under a risk management at sufficient level.

1.2 Scope

JCI has performed the 5th Periodic Determination on Monitoring of the Bulgaria Svilosa Biomass Project according to the requirement of CFU set as part of the MP for this specific project. Progress of the project, establishment and implementation of the quality assurance system and the procedures of data management / control system have been assessed on site in accordance with the IETA / PCF Validation and Verification Manual / Check List. The monitoring data and the result of the Workbook calculation prepared by Svilocell Company as the basis of the assessment of the 5th Periodic Determination on Monitoring Report has also been reviewed. Additionally, this 5th Periodic Determination on Monitoring is based on currently valid documentation of UNFCCC. In this context, the relevant documents are the “Marrakech Accord” and the decision of COP/MOP.

1.3 Description of the Project Activity

Project Parties:	Bulgaria, The World Bank CFU
Title of project activity:	Bulgaria, Svilosa Biomass Project
Project Entity:	Svilocell Company
	5253 Svishtov, Bulgaria
	TEL: 359 631 /2 27 81
	E-mail address: antonov @svilosa.bg
	Quality Manager : Mr. Lyusi Antonov
Location of the project activity:	5253 Svishtov, Bulgaria

Outline of the Project

Svilocell Company has introduced and commissioned a boiler fuelled with the biomass waste originated from the timber supplied to the plant as a raw material for the pulp production in the plant. The steam generated from the biomass boiler is supplied to the pulp plant to substitute partially the steam which has been supplied from the existing coal fired thermal power station belongs to the Svilosa Power Station AD as the sole heat energy source to the pulp plant. Utilization of the biomass waste as the heat energy source of the pulp plant brings an effect of GHG reduction in two ways.

Firstly, fuel coal consumption in the thermal power station is reduced because of the decreased heat demand by the pulp plant with the effect of heat produced by the biomass boiler and CO₂ emission from combustion of the fuel coal is reduced accordingly.

Secondary, consumption of timber waste in the biomass boiler reduces the amount of waste disposal as stockpile to compose a source of CH₄ emission.

Those two effects are planned to bring GHG emission reductions of total minimum 450,000 tonnes CO₂e as a result of the project activity though the project life, i.e., 2004 to 2012.

2 METHODOLOGY

The IETA / PCF Validation and Verification Manual / Checklist are utilized to secure the transparency and credibility of the determination on monitoring. The 5th Periodic Determination on Monitoring Checklist, reinforced with the additional items to cover the check points required to be verified specifically for the project, covers following items and helps the verifier to perform the work with high degree of credibility.

Areas covered by the checklist

- (1) Required Basic data
- (2) Data Management System / Controls
- (3) GHG calculation procedures and management control testing
- (4) Detailed audit testing of residual risk areas and random testing

5th Periodic Determination on Monitoring Checklist is utilized as follows

- (1) Systemizing, detailing and clarifying the conditions of Emission Reduction Purchasing
- (2) Securing the transparency of the determination on monitoring process on the documentation of the result.
- (3) Securing the credibility of the determination on monitoring based on the designated standard.

First of all, the desk review was performed based on the following monitoring report and the annual report prepared by Svilocell Company which was submitted on January 30, 2009.

- (1) The year 2008 data according to the MP of the Project
- (2) The result of the Workbook calculation
- (3) The annual report 2008

After the desk review, the On-site Assessment was performed.

Duration of determination on monitoring

Desk review: From January 30, 2009 to March 10, 2009

On-site Assessment: From March 18, 2009 to March 20, 2009

Reporting: From March 31, 2009 to May 26, 2009

2.1 Review of Documentation

Following documents and data are reviewed in order to verify the project activities at the desk review and the site.

- (1) Monitoring report

- (2) Annual report
- (3) Organization Chart
- (4) Management Manual
- (5) Calibration and maintenance record of key instruments
- (6) General information about operation of CHPP
- (7) Contract for the data presentation between SPS and Svilocell Co.
- (8) Data of avoided fuel coal consumption in CHPP
- (9) Workbook
- (10) Actual operation results of CHPP
- (11) Total amount of steam supplied to cellulose plant
- (12) Total fuel consumption in the power station
- (13) Average fuel heat value
- (14) Key input data
- (15) Manual input data
- (16) Shutdown record of the plant
- (17) Record of failure and/or mal function of monitoring instrument
- (18) External ISO 9001 management system audit

2.2 Site Visits

Assessment team has visited the site for On-Site Assessment from March 18, to March 20, 2008. The objectives of the assessment is to verify that the project is implemented, monitored and reported as planned. During the visit the assessment team met representatives of the WB and CFU, who visited the site on March 19, 2009.

The interviewed persons at the site are described in following Table 2.1 and the Summary of the On-site Assessment in Annex 2.

Table 2.1 List of Interviewed Persons

	Organization	Name of person	Title
Project Participant	Svilocell Co.	Mr. Yordan Gaidarov	Executive Director Svilocell Co.
		Mr. Plamen Petrov	Project Manager, Production Manager
		Ms. Diana Ganeva	Head of Energy Projects
		Mr. Tzvetan Valkov	Manager Wood Yard Department
	Svilosa Power Station	Mr. Lyubomir Stamatov	Executive Director
		Mr. Blajo Blajev	Production Manager

2.3 Assessment

The Assessment has been done as follows;

- (1) Investigation of whether all relevant equipment are operated properly, function as anticipated and are maintained fairly.

- (2) Confirmation of environmental and social impacts.
- (3) Interviews with the Project management, QA manager and operating and maintenance staffs.
- (4) Observations in order to check the risks for inappropriate operation and data collection procedures.
- (5) Reviews on information flows for generating, aggregating /collecting and reporting the selected monitored parameters.
- (6) Check the monitoring report/annual report data and the relevant raw data.
- (7) Comparison with the data inputted in the Workbook prepared by the person be in charged input and the operation data collected by the operators.
- (8) Re-calculation of GHG emission reductions by using the Workbook attached in the MP and the monitoring report /Workbook submitted on January 30, 2009.
- (9) Check the evidence to be provided by the project owners that demonstrates that all metering equipments are calibrated.
- (10) Auditing of the required procedures, routines, and documentations to check their proper application.
- (11) Assessment of all the data collection, analysis and transmission procedures all along the chain from the project facilities to CFU, in order to ensure that CFU receives relevant, complete and synthetic information to execute payments under the confidential Emission Reductions Purchase Agreement.

2.4 Reporting of Findings

Findings established during the determination on monitoring may be that:

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

A Forward Action Requests (FAR) should be issued, where:

- the actual project monitoring and reporting practices requires attention and /or adjustment for the next consecutive determination on monitoring period, or
- an adjustment of the MP is recommended.

In the context of FARs, risks have been identified, which may endanger the delivery of high quality ERUs in the future, i.e. by deviations from standard procedures as defined by the MP. As a consequence, such aspects should receive a special focus during the next consecutive Determination on Monitoring. A FAR may originate from lack of data sustaining claimed emission reductions.

3 DETERMINATION ON MONITORING FINDINGS

3.1 Remaining Issues, CARs, FARs from Previous Determination on PDD or Determination on monitoring

There are no remaining issues.

3.2 Project Implementation

The following subjects were discussed.

- 1) Changes in the management
- 2) Operating and Maintenance conditions
- 3) Equipment conditions

No CARs or FARs were addressed.

3.3 Completeness of Monitoring

The following subjects were discussed.

- 1) Replacements in the flow meter systems for technological measurement at the Biomass boiler and additional flow meter for supplemental, non commercial determination on monitoring measurement of heat supplied by SPS.

No CARs or FARs were addressed.

3.4 Accuracy of Emission Reduction Calculations

The following subjects were discussed.

- 1) To improve the log and calculation of the heat output of the Biomass boiler.

The conclusion are shown in the following CAR - 3 as indicated in the Annex 1.

CAR-3 To introduce computer assisted log with hard copy printout of the shift records of the heat output of the biomass boiler in the Biomass Boiler operation room, with daily and monthly totals and backup of data at monthly intervals.

CAR-3 was resolved and cleared by Svilosa.

3.5 Quality of Evidence to Determine Emission Reductions

The following subjects were discussed.

- 1) Check of the input data, the operation data and the source data including the external data
- 2) Check of the daily log sheet
- 3) Check of calibration of measuring equipment

The conclusion are shown in the following CAR – 1 and CAR – 2 as indicated in the Annex 1.

CAR - 1 There are input mistakes during data transfer in the Work book and in the Annual Report. The input mistakes do not affect and do not change the requested Project

emission reductions. The data for the delivery of wood for Acacia for August 2008 has to be corrected from 526.825 t to 526.835 t both in the Workbook and in the report. The total for the delivery of wood only in the report has to be corrected for Acacia from 6253.084 t to 6253.094 t, for Beech from 70 465.423 t to 79 465.423 t. The heat energy from CHPP for June 2008 has to be corrected only in the report from 8608 MWh/m to 8680 MWh/m.

CAR – 2 Data log sheets in the Biomass Boiler operation room should be filed monthly, semi-annually and a dedicated storage safety place provided there for their storage. Log sheet files transfer to other departments and use outside the operation room should be recorded in a register, with the names of the person giving permission, the name of the person taking the logs and the name of the person and date when the log sheets are returned.

CAR – 1 and CAR – 2 were resolved and cleared by Svilosa.

3.6 Management System and Quality Assurance

The following subjects were discussed.

- 1) Organization chart, responsibilities and roles
- 2) Data flow diagrams
- 3) Reporting procedure
- 4) Management Manual
 - (i) Internal audit
 - (ii) Training program and the record for the all staffs
 - (iii) Handling of the input data to the Workbook and the operation data/the source data
 - (iv) Change of the Management Manual

As result of the discussions and findings two (2) CARs – CAR - 2 and CAR – 3 and one (1) OBS were addressed as indicated in Annex 1 and in items 3.4 and 3.5 above.

OBS - 1 It is recommendable to incorporate in the Management Manual a procedure for the data transfer and recording of the daily heat output from the Biomass boiler in the daily log for the Svilocell Co heat consumption and heat input, which is performed at present, so this log can serve as a second hard copy source for data determination on monitoring of the heat output of the Biomass boiler.

4 PROJECT SCORECARD

Project Scorecard shows the conclusion of risk analysis for 5th Periodic Determination on Monitoring in the following Table 4.1.

Table 4.1 Project Scorecard

Objectives	Key aspects for Determination on Monitoring	Scope of Sampling	Results of data review	Conclusion
Emission Sources	Completeness	All sources	Monthly Protocols and Yearly Protocol for all Emission sources during 2008 are checked. 1) Heat production by biomass boiler 2) Process heat production of CHP 3) Total electricity generation of CHP 4) Delivery of wood	OK, However data log sheets for first half of the year were misplaced after internal audit, but after monthly data input has been recorded and completed. Risk Level: LOW - Medium
Calculation Equation	Conformity	All Equations	All Equations are defined and protected in the excel sheet of the Workbook.	OK Risk Level: LOW
Default Values, Emission Coefficients	Conformity	All values	All default values and Emission Coefficients are checked and confirmed. Yearly Protocol for Emission coefficients for 2008 are checked and confirmed: 1) CO ₂ emission factor of coal 2) Calorific value of coal 3) CHP thermal Efficiency 4) Blended wood consumption ratios	OK Risk Level: LOW
	Accuracy	All values		OK Risk Level: LOW
Monitored data	Accuracy	Sampling from all data	Monthly Protocols for Monitored data during 2008 are checked. Those data are the sum of hourly/daily data records. Data is crosschecked against commercial records and Graphic output of heat production of biomass boiler computer system for boiler operation, and against Svilocell Co. daily heat consumption log. 1) Heat production by biomass boiler 2) Process heat production of CHP 3) Total electricity generation of CHP 4) Delivery of wood 5) Pulp production	OK Risk Level: LOW
	Substantiality	Sampling	Monthly Protocols for all Emission sources	OK

Objectives	Key aspects for Determination on Monitoring	Scope of Sampling	Results of data review	Conclusion
		from all data	during 2008 are checked. Hourly/Daily records are checked with sampling and obtained the copies of those. Misplaced log sheets for first half of the year for Biomass boiler were not checked.	Risk Level:
	Completeness	All data	Ditto	OK Risk Level: LOW- Medium
Calculation in the Monitoring Report	Accuracy	All calculation	No errors found.	OK Risk Level: Low
Numerical values in the Monitoring Report	Accuracy	All values	Mistyped data were found. The data for the delivery of wood for Acacia for August 2008 has to be corrected from 526.825 t to 526.835 t both in the Workbook and in the report. The total for the delivery of wood only in the report has to be corrected for Acacia from 6253.084 t to 6253.094 t, for Beech from 70 465.423 t to 79 465.423 t. The heat energy from CHPP for June 2008 has to be corrected only in the report from 8608 MWh/m to 8680 MWh/m	OK Risk Level: LOW The data mistakes and corrections do not change or affect the Project Emission Reductions

5 DETERMINATION ON MONITORING STATEMENT

Introduction

JCI has been engaged by the CFU to examine the greenhouse gas (GHG) emission reductions reported from Svilocell Company for the period, January, 2008 to December, 2008, equating to **45,959** tonnes of CO₂ equivalents.

Our opinion relates to the project's GHG emissions and resulting GHG emissions reductions reported for the year ended December, 2008.

Responsibilities of Svilocell Company and JCI

The management of the Svilocell Company is responsible for the preparation of the GHG emissions data and the reported GHG emissions reductions on the basis set out within the project Monitoring and Determination on monitoring Plan dated October, 2002 and its subsequent revisions. The development and maintenance of records and reporting procedures in accordance with that plan, including the calculation and determination of GHG emission reductions from the project is the responsibility of the management of Svilocell Company.

It is JCI's responsibility to express an independent GHG determination on monitoring opinion on the GHG emissions from the project for the year ended December, 2008 and on the calculation of GHG emission reductions from the project for the year ended December, 2008 based on the verified emissions for the 2008.

Basis of GHG determination on monitoring opinion

JCI's determination on monitoring approach was based on the requirements as defined under the Kyoto Protocol, Marrakech accord, as well as those defined by the CDM Executive Board/JI Supervisory Committee.

JCI's approach is risk-based, drawing on an understanding of the risks associated with reporting GHG emissions data and the controls in place to mitigate these. JCI's examination includes assessment, on a test basis, of evidence relevant to the amounts and disclosures in relation to the project's GHG emission reductions for the year ended December, 2008.

We 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 the amount of GHG emission reductions for the year ended December, 2008, prepared on the basis of the MP dated October, 2002, are fairly stated.

We conducted our assessment having regard to the Project Design Document including Svilosa Biomass Project's MP dated October, 2002 and its subsequent revisions. This assessment includes:

- collection of evidence supporting the reported data
- checking whether the provisions of the MP dated October, 2002, were consistently and appropriately applied

We have verified whether the information from Svilocell Company is current and has been correctly extracted from the Project Design Document. And we have verified whether the emissions reduction achieved has been determined correctly.

Opinion

Based on the information we have seen and evaluated.

It is our opinion that the amount of **45,959 tonnes of CO2 equivalents** indicated in the monitoring report during the period of January, 2008 to December, 2008 can be justified appropriately as the result of the 5th Periodic Determination on Monitoring.

6 REFERENCES

List of the Main Documents / Data provided by Svilocell Company is as follows.

/1/	Monitoring Report "SVILOSА" AD-Svishtov, Bulgaria Svilosa biomass Project, January 2009
/2/	Calculation result of Workbook , 2008/1/24
/3/	Annual Report for generated Carbon Emissions January 2009
/4/	Protocol for the data of heat produced by Svilosa Power Station and the Boiler efficiency dated December 2008
/5/	Biomass Boiler monthly Steam production Charts and records
/6/	One set of monthly input data (for December 2008)

/7/	Calibration certificates of measuring equipment for biomass boiler project
/8/	Daily heat production and consumption log for Svilocell Co for January – September 2008
/9/	Updated Data Flow and Organizational Charts with the new responsible persons names
/10/	Complex permit for operation of waste disposal site from 6.11.2008
/11/	External Audit report from LRQA 13.05.2008

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