



# **Prototype Carbon Fund**

## **Verification Report** **- for Year 2006 -**

### **Third Periodic Verification of Bulgaria Svilosa Biomass Project**

**April 19, 2007**

**JCI CDM Center**

**Report No. JCI-CDM-VER-003-1-3P**

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Approved by: YOSHIDA Akio	Organisational unit: JCI CDM Center
Client: Prototype Carbon Fund	Client ref.:

## Summary:

After the desk review for the monitoring report 2006 prepared by Svilocell Company which was submitted to JCI on January 31, 2007, JCI Verification Team has done the on-site assessment of 3rd periodic verification at Svilosa Site, Bulgaria during February 26 to March 1, 2007 for the Bulgaria Svilosa Biomass Project.

The summary of the 3rd Periodic Verification through the on-site assessment are shown below and detailed in this report and the attachments.

1. Progress status of Four (4) FARs which have been addressed as 2P-FAR-1, 2P-FAR-2, 2P-FAR-3 and 2P-FAR-4 at the 2nd Periodic Verification are confirmed and the FARs are cleared as shown in the attached Non-Conformance (NC) Forward Action Request and the Clearance Report Forms. (Annex 2)

2. Total Project Emissions reductions (tonnes CO<sub>2</sub>e) :

Project Emissions reductions, amount **48,445 tonnes CO<sub>2</sub>e** was verified appropriately for the period of January, 2006 to December, 2006 which is requested in the summary sheet of the Workbook of the monitoring report.

3. One (1) FAR is addressed as the findings through the 3rd periodic verification and they are shown in Forward Action Request forms attached.

3P-FAR-1 ; Improvement to the technological computer system by introducing monthly backup of the data base of the stored in the system production, monitoring and control data and a hard copy printout of the monthly heat production chart for better tracing of actual production.

3P-FAR-1-1 to 3P-FAR-1-3 related to the improvement of the technological computer system are shown in the Attachment 1 of Annex 3.

Report No.: JCI-CDM-VER-003-1-3P	Subject Group:
Report title: 3rd Periodic Verification of the Bulgaria Svilosa Biomass Project	
Work carried out by: OKADA Masaki, SAKAI Yoshihisa, MORI Yoichi,	
Work verified by: SATO Hideyuki	
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## Indexing terms

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## Abbreviations

CAR	Corrective Action Request
CDM	Clean Development Mechanism
EMS	Environment Management Plan
ER	Emission Reduction
ERU	Emission Reduction Unit
ERPA	Emission Reductions Purchase Agreement
FAR	Forward Action Request
GHG	Green House Gas
IETA	International Emission Trading Association
JCI	Japan Consulting Institute
MMS	Management and Monitoring System
MP	Monitoring Plan
OE	Operational Entity
PAD	Project Appraisal Document
PCF	Prototype Carbon Fund
PDD	Project Design Document
PT	Performance Test
QA	Quality Assurance
QC	Quality Control
RIOS	Regional Environmental Inspection
SPS	Svilosa Power Station AD (CHPP)
TOR	Terms of Reference
UNFCCC	United Nations Framework Convention for Climate Change

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Annex 1: 3rd Periodic Verification Checklist

Annex 2: Non-conformance (NC), Forward Action and Clearance Report (2P-FAR-1, 2, 3 and 4)  
at the 2nd Periodic Verification

Annex 3: Summary of On-site Assessment

- 1) Summary of On-site Assessment
- 2) Main Documents / Data List obtained during the On-site Assessment
- 3) Forward Action Request (FAR) and Clearance Report  
3P-FAR-1 : Attachment 1 Detailed Items for 3P-FAR-1

Annex 4 : Photo Book of 3rd Periodic Verification

Annex 5 Annual Report (2006)

Annex 6 Excel Worksheet (2006)

## 1 INTRODUCTION

As a Designated Operation Entity (DOE), Japan Consulting Institute (JCI) performed the 3rd Periodic Verification of Bulgaria Svilosa Biomass Project receiving an order from PCF for the execution of three times Periodic Verification following to the Initial verification on the project. This 3rd Periodic Verification is performed on the basis of TOR of PCF and currently valid conditions of CDM / JI stated in Kyoto Protocol, Marrakech Accords and the decisions of CDM Executive Board.

### Verification Team

Team Leader	: SATO Hideyuki
Team Member	: OKADA Masaki
Team Member	: SAKAI Yoshihisa
Team Member	: MORI Yoichi
Team Member	: Vldamir Kanev
Local Expert	: Todor Georgiev Donchev

### 1.1 Objective

Objective of the 3rd Periodic Verification 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, 2006 to December, 2006 under a risk management at sufficient level.

### 1.2 Scope

JCI has performed the 3rd Periodic Verification of the Bulgaria Svilosa Biomass Project according to the requirement of PCF 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 3rd Periodic Verification Report has also been reviewed. Additionally, this 3rd Periodic Verification 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, PCF
Title of project activity:	Bulgaria, Svilosa Biomass Project
Project Entity:	Svilocell Company
	5253 Svishtov, Bulgaria
	TEL: 359 631 /2 27 81
	E-mail address: <a href="mailto:antonov@svilosa.bg">antonov @svilosa.bg</a>
	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 to 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 CO<sub>2</sub> 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 CH<sub>4</sub> emission.

Those two effects are planned to bring GHG emission reductions of total minimum 450,000 tonnes CO<sub>2</sub>e as a result of the project activity though the project life, i.e., 2004 to 2012.(First Amendment ERPA)

## 2 METHODOLOGY

The IETA / PCF Validation and Verification Manual / Checklist are utilised to secure the transparency and credibility of the verification. The 3rd Periodic Verification 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

3rd Periodic Verification Checklist is utilized as follows

- (1) Systemizing, detailing and clarifying the conditions of Emission Reduction Purchasing
- (2) Securing the transparency of the verification process on the documentation of the result.
- (3) Securing the credibility of the verification 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, 2007 and January 31, 2007.

- (1) The year 2006 data according to the MP of the Project
- (2) The result of the Workbook calculation
- (3) The annual report 2006

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

### **Duration of verification**

Desk review: From January 31, 2007 to February 20, 2007

On-site Assessment: From February 26, 2007 to March 1, 2007

Reporting: From March 5, 2007 to March 29, 2007

### **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

## 2.2 Site Visits

Verification team has visited the site for On-Site Assessment from February 26, to March 1, 2007. The objectives of the assessment is to verify that the project is implemented, monitored and reported as planned.

The interviewed persons at the site are described in following Table 2.1 and the Summary of the On-site Assessment in Annex 3.

Table 2.1 List of Interviewed Persons

	Organization	Name of person	Title
<b>Project Participant</b>	Svilocell Co.	Mr. Yordan Gaidarov	Project Manager, Managing Director Production
		Mr. Lyusi Antonov	Quality Manager
		Ms. Diana Ganeva	Engineer,
<b>Stake holders</b>	Svilosa Power Station	Mr. Lyubomir Stamatov	Executive Director
		Mr. Bozhin Bozhinov	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 is 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, 2007.
- (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 PCF, in order to ensure that PCF receives relevant, complete and synthetic information to execute payments under the confidential Emission Reductions Purchase Agreement.
- (12) Verification of FARs from the 2nd Verification Report

## 2.4 Reporting of Findings

Findings established during the verification may be that:

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

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

- the actual project monitoring and reporting practices requires attention and /or adjustment for the next consecutive verification 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 AAUs and 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 verification. A FAR may originate from lack of data sustaining claimed emission reductions.

### 3 VERIFICATION FINDINGS

#### 3.1 Remaining Issues, CARs, FARs from Previous Validation or Verification

Progress status of Four (4) FARs which have been addressed as 2P-FAR-1, 2P-FAR-2, 2P-FAR3 and 2P-FAR-4 at the 2nd Periodic Verification are confirmed and the FARs are cleared as shown in attached Non-Conformance (NC), Forward Action Request and Clearance Report Form (Annex 2).

#### 3.2 Project Implementation

The following subjects were discussed.

- 1) Operating and Maintenance conditions
- 2) Equipment conditions

No findings were addressed.

#### 3.3 Completeness of Monitoring

The following subjects were discussed.

- 1) Improvement to the technological computer system

The conclusion is shown in following **3P-FAR-1** as indicated in the Annex 3.

**3P-FAR-1** : Improvement to the technological computer system by introducing monthly backup of the data base of the stored in the system production, monitoring and control data and a hard copy printout of the monthly heat production chart for better tracing of actual production.

**3P-FAR-1-1 to 3P-FAR-1-3** are shown in the following Table 3.1 and in the Attachment 1 of Annex 3

Table 3.1      **Detailed Items for 3P-FAR-1**

<b>3P-FAR-1-1</b>	Introduce a procedure for monthly backup of the data base of the stored in the technological computer system data for the production, monitoring and control parameters of the biomass boiler.
<b>3P-FAR-1-2</b>	Introduce a procedure for a hard copy printout of the monthly heat production chart displayed on the technological computer system.
<b>3P-FAR-1-3</b>	Improve the Management Manual of the Management and Monitoring System of the biomass boiler with the introduction of the procedures for the monthly data base back up and printout of the monthly heat production chart of the technological computer system.

#### 3.4 Accuracy of Emission Reduction Calculations

The following subjects were discussed.

- 1) Upgrading of the Workbook
- 2) Upgrading of the Management Manual according to the upgrading of the Workbook

No findings were addressed.

### **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

No findings were addressed.

### **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

No findings were addressed.

## 4 PROJECT SCORECARD

Project Scorecard shows the conclusion of risk analysis for 3rd Periodic Verification in the following Table 4.1.

Table 4.1 Project Scorecard

Risk Areas		Conclusions			Summary of findings and comments	Error/Discounted Uncertainty Tonnes
		Base-line Emissions	Project Emissions	Calculated Emission Reductions		
<b>Completeness</b>	Source coverage/ boundary definition	NA	Full	Full	Though the score is identified as “Full”, it is better to introduce monthly backup data base for the improvement to the technological computer system. <b>(3P-FAR-1)</b>	Not effected.
<b>Accuracy</b>	Physical Measurement and Analysis	NA	Full	Full	—	—
	Data calculations	NA	Full	Full	—	—
	Data management & reporting	NA	Full	Full	—	—
<b>Consistency</b>	Changes in the project	NA	Full	Full	—	—

## 5 VERIFICATION STATEMENT

### Introduction

JCI has been engaged by the PCF to examine the greenhouse gas (GHG) emission reductions reported from Svilocell Company for the period, January, 2006 to December, 2006, equating to **48,445** tonnes of CO2 equivalents.

Our opinion relates to the project's GHG emissions and resulting GHG emissions reductions reported for the year ended December, 2006.

### 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 Verification Plan dated October, 2002. 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 verification opinion on the GHG emissions from the project for the year ended December, 2006 and on the calculation of GHG emission reductions from the project for the year ended December, 2006 based on the verified emissions for the 2006.

### Basis of GHG verification opinion

JCI's verification 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, 2006.

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, 2006, prepared on the basis of the MP dated October, 2002, are fairly stated.

We conducted our verification having regard to the Project Design Document including Svilosa Biomass Project's MP dated October, 2002. 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 **48,445 tonnes of CO2 equivalents** indicated in the monitoring report during the period of January, 2006 to December, 2006 can be justified appropriately as the result of the 3rd Periodic Verification.

## 6 REFERENCES

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

/1/	Monitoring Report “SVILOSA” AD-Svishtov, Bulgaria Svilosa biomass Project, January 2007
/2/	Calculation result of Workbook , 2007/1/30
/3/	Management Manual Rev.2 November 1, 2006
/4/	Annual Report for generated Carbon Emissions January 2007
/5/	Report (transferred data on SPS parameters for December 2006)
/6/	Flow meter (PROWIRL 72 F) specification sheet
/7/	One set of monthly input data (for December 2006)
/8/	One copy of filled input log sheet for May 29, June 1, September 20 and October 30, 2006
/9/	Monthly heat production input data tables for January, March and May 2006 including protocol for biomass boiler monthly input for January 2006
/10/	Updated technological scheme
/11/	Copy of advising letter for the structural reorganization of Sviloza AD.
/12/	Certificate for first class investment for Sviloza AD
/13/	QA Audit report December 15, 2006
/14/	Calibration certificates of measuring equipment for biomass boiler project

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