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## **First Periodic Verification Report**

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### **Prototype Carbon Fund**

### **First Periodic Verification of the Bulgaria Svilosa Biomass Project**

**April 25, 2005**

**JCI CDM Center**

**Report No. JCI-CDM-VER-003-1  
Revision No. 00**

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

**Summary:**

After the desk review for the monitoring report 2004 prepared by Svilosa Company which was submitted to JCI on January 7, 2005, JCI Verification Team has done the On-site Assessment of 1<sup>st</sup> Periodic Verification at Svilosa Site, Bulgaria during January 31 to February 3, 2005 for the Bulgaria Svilosa Biomass Project. The summary of the findings by Verification Team through the On-site Assessment are shown below and detailed in this report and the attachments.

1. Progress status of two (2) FARs which have been addressed as FAR-001 and FAR-002 at the Initial Verification are confirmed and the FARs are cleared as shown in the attached Non-Conformance (NC) Forward Action Request and the Clearance Report Form. (Annex 3)
2. Total Project Emissions reductions (tonnes CO<sub>2</sub>e) :  
 Project Emissions reductions requested in the monitoring report, amount 18,937 tonnes CO<sub>2</sub>e is verified as **18,935 tonnes CO<sub>2</sub>e** for the period of May, 2004 to December, 2004 which is included in the summary sheet of the Workbook.
3. Three FARs are addressed as the findings through the 1<sup>st</sup> Periodic Verification as follows and are shown in the attached Forward Action Request Form (Annex 4)
  - 1 ) **FAR-1:** Upgrading of the Workbook is considered preferable to avoid risks on the data mismatch between the source data and the input data.
  - 2) **FAR-2** Upgrading of the Management Manual is considered preferable to avoid risks on the data transfer and reporting.
  - 3) **FAR-3** The values in the reports to PCF should be with the same format and the meaningful digits after decimal point as the values displayed in the excel work sheet and the source data to avoid the reporting risks.

Report No.: <b>JCI-CDM-VER-003-1</b>	Subject Group:
Report title: <b>1<sup>st</sup> Periodic Verification of the Bulgaria Svilosa Biomass Project</b>	
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#### Indexing terms

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## Abbreviations

CAR	Corrective Action Request
CDM	Clean Development Mechanism
CHPP	Combined Heat and Power Plant
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
KP	Kyoto Protocol
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)
UNFCCC	United Nations Framework Convention for Climate Change
WB	World Bank
W/B	Workbook

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Annex 1: 1<sup>st</sup> Periodic Verification Checklist

Annex 2: Photo Documentation

Annex 3: Non-conformance (NC), Forward Action and Clearance Report (FAR-001, 002) at the Initial Verification

Annex 4: 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
  - FAR-1: Attachment-1 Detailed Items for FAR-1
  - FAR-2: Attachment-2 Detailed Items for FAR-2
  - FAR-3

# 1 INTRODUCTION

As an Operation Entity (OE), Japan Consulting Institute (JCI) performed the 1<sup>st</sup> Periodic Verification of Bulgaria Svilosa Biomass Project receiving an order from PCF for the execution of first three Periodic Verification following to the Initial verification on the project. This 1<sup>st</sup> Periodic Verification is performed on the basis of currently valid conditions of CDM / JI stated in Kyoto Protocol, Marrakesh Accords and the decisions of CDM Executive Board.

## Verification Team

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

## 1.1 Objective

Objective of the 1<sup>st</sup> Periodic Verification is to review and verify that 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 May, 2004 to December, 2004 under a risk management at sufficient level.

## 1.2 Scope

JCI has performed the 1<sup>st</sup> 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 Project Design Document, Determination Report and other related documents prepared by PCF have been reviewed together with the technical documents, the monitoring data and the result of the Workbook calculation prepared by Svilosa Company as the basis of the assessment. Initial Verification Report has also been reviewed. Additionally, this 1<sup>st</sup> Periodic Verification is based on currently valid documentation of UNFCCC. In this context, the relevant documents are the “Marrakesh Accord”.

## 1.3 Description of the Project Activity

Project Parties:	Bulgaria, PCF
Title of project activity:	Bulgaria, Svilosa Biomass Project
Project Entity:	Svilosa Company
	5253 Svishtov, Bulgaria
	TEL: 359 631 /2 27 81
	E-mail address: pulpmill@svilosa.bg
	Responsible Person: Mr. Yordan GAYDAROV
Location of the project activity:	5253 Svishtov, Bulgaria

## Outline of the Project

Svilosa Company has introduced and commissioned a boiler fuelled with the biomass waste originating 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 the steam which has been supplied from the existing coal fired thermal power station Svilosa Power Station AD (SPS) as the sole heat energy source to the pulp plant. Utilization of the biomass waste as heat energy source for 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 because of 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 to the stockpile, and stockpiled timber waste is a source of CH<sub>4</sub> emission, thus CH<sub>4</sub> emission reduction is achieved. Those two effects bring GHG emission reductions of total minimum 450,000 tonnes CO<sub>2</sub>e as a result of the project activity through 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 1<sup>st</sup> Periodic Verification Checklist, reinforced with the additional items to cover the check points required to be verified specifically for the project, covers the following items and helps the verifier to perform the work with high degree of credibility.

Areas covered by the checklist

- (1) Current status of the installations
- (2) Open issues indicated in the Initial Verification Report
- (3) Data Management System / Controls
- (4) GHG calculation procedures and management control testing
- (5) Detailed audit testing of residual risk areas and random testing

1<sup>st</sup> 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 prepared by Svilosa Company which was submitted on January 7, 2005.

- (1) The first year (2004) data according to the Monitoring Plan of the Project
- (2) The result of the Workbook calculation

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

### Duration of verification

Desk review:	From January 7, 2005 to January 20, 2005
On-site Assessment:	From January 31, 2005 to February 3, 2005
Reporting:	From February 8, 2005 to March 11, 2005
Final report	April 25, 2005

### 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 (The first year (2004) data)
- (2) Calculation result of Workbook
- (3) Organization Chart
- (4) Management Manual Rev.0 Jan.10, 2005
- (5) Calibration and maintenance record of key instruments
- (6) General information about operation of CHPP
- (7) Contract between Svilosa Power Station AD and Svilosa Company regarding to the data transfer
- (8) Data of avoided fuel coal consumption in CHPP
- (9) Actual operation results of CHPP
- (10) Total amount of steam supplied to cellulose plant
- (11) Total fuel consumption in the power station
- (12) Average fuel heat value
- (13) Key input data
- (14) Manual input data
- (15) Shutdown record of the plant
- (16) 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 January 31, to February 3, 2005. The objectives of the assessment is to verify that the project is implemented, monitored and reported as planned.

The interviewed persons at the site and the short summary of the assessment are described in Annex 4.

## 2.3 Assessment

The Assessment has been done as follows;

- (1) Investigation of whether all relevant equipment are installed 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 /collating and reporting the selected monitored parameters.
- (6) Check the monitoring report data and the relevant raw data.
- (7) Comparison with the data inputted in the Workbook prepared by the person in charge of input and the operation data collected by the operators.
- (8) Re-calculation of GHG emission reductions by using the Workbook attached in the Monitoring Plan and the Monitoring Report/Workbook submitted on January 7, 2005.
- (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 Initial 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 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 two (2) FARs which have been addressed as FAR-001 and FAR-002 at the Initial Verification are confirmed and the FARs are cleared as shown in attached Non-Conformance (NC), Forward Action Request and Clearance Report Form. ( Annex 3 )

#### 3.2 Project Implementation

As per the boiler furnace which fireproof mortar at the furnace roof has fallen off partially reported at the Initial Verification, the related drawings and documents is reviewed. It is reconfirmed that the necessary improvements of the supporting steel structures for the refractory work are fairly made. Said parts are inspected at every possible chance at the time of the scheduled shut down of the boiler for cleaning the furnace and the confirmation is made that no sign of the further problem has been observed.

#### 3.3 Completeness of Monitoring

The following subjects were discussed.

- 1) Addition of Sheet 8, change of Sheet 3 & 4 and deletion of a part of Sheet 5 in the Workbook
- 2) Confirmation of the calibration result for the key equipment based on the site survey and documents.

The conclusion is indicated in the **FAR-1**. (Annex 4)

#### 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

The conclusion is indicated in the **FAR-1**. (Annex 4)

#### 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

The conclusion is indicated in the **FAR-2-2** and **2-3**. (Annex 4)

#### 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

- Internal audit
- Training program and the record for all the staff
- Handling of the input data to the Workbook and the operation data/the source data
- Change of the Management Manual

The conclusion is indicated in the **FAR-2** and **3**. (Annex 4)

## 4 PROJECT SCORECARD

Risk Areas		Conclusions			Summary of findings and comments	Error/Discounted Uncertainty Tonnes
		Baseline Emissions	Project Emissions	Calculated Emission Reductions		
<b>Completeness</b>	<ul style="list-style-type: none"> <li>Source coverage/ boundary definition</li> </ul>	NA	Full	Full		
<b>Accuracy</b>	<ul style="list-style-type: none"> <li>Physical Measurement and Analysis</li> </ul>	NA	Full	Full		
	<ul style="list-style-type: none"> <li>Data calculations</li> </ul>	NA	Partial	Partial	The Workbook is required to be revised and the revision to be reported to and concurred by the PCF.	2 ton CO2e would be discounted from the GHG emission reduction quantity in the monitoring report.
	<ul style="list-style-type: none"> <li>Data management &amp; reporting</li> </ul>	NA	Partial	Partial	Management Manual is required to be revised according to the revision of the Workbook, the reporting procedure and data acquisition procedure.	
<b>Consistency</b>	<ul style="list-style-type: none"> <li>Changes in the project</li> </ul>	NA	Full	Full		

## 5 VERIFICATION STATEMENT

### Introduction

JCI has been engaged by the PCF to examine the greenhouse gas (GHG) emission reductions reported from Svilosa Company for the period, May, 2004 to December, 2004, equating to 18,937 tonnes of CO<sub>2</sub> equivalents.

Our opinion relates to the project's GHG emissions and resulting GHG emissions reductions reported for the year ended December, 2004.

### Responsibilities of Svilosa Company and JCI

The management of the Svilosa 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 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 Svilosa Company.

It is our responsibility to express an independent GHG verification opinion on the GHG emissions from the project for the year ended December, 2004 and on the calculation of GHG emission reductions from the project for the year ended December, 2004 based on the verified emissions for the 2004.

### Basis of GHG verification opinion

Our 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.

Our 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. Our 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 2004.

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 2004, prepared on the basis of the Monitoring Plan dated October, 2002, are fairly stated.

We conducted our verification having regard to the Project Design Document including Svilosa Biomass Project's Monitoring Plan dated October, 2002. This assessment includes:

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

We have verified that the information from Svilosa Company is actual and representative of current operation; that it has been correctly derived from the Project Design Document and that the emissions reduction achieved have been correctly determined.

### Opinion

Based on the information we have seen and evaluated, it is our opinion that **18,935 tonnes of CO2 equivalents** instead of 18,937 tonnes of CO2 equivalents indicated in the monitoring report have been reduced by the project during the period May, 2004 to December, 2004.

## 6 REFERENCES

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

- /1/ Monitoring Report (The first year (2004) data)
- /2/ Calculation result of Workbook
- /3/ Management Manual Rev.0 Jan.10, 2005
- /4/ Organization chart
- /5/ Contract between Svilosa Power Station AD and Svilosa Company regarding to the data transfer
- /6/ Report (transferred data on CHPP parameters)
- /7/ Protocol of the tests for fixed parameters of biomass fuel Contract between Svilosa Power Station AD and Svilosa Company regarding to the data transfer
- /8/ One set of monthly input data (for December 2004)
- /9/ One copy of filled input log sheet for December 2004
- /10/ First Amendment to the Emission Reduction Purchase Agreement for the Bulgaria Svilosa Biomass Project
- /11/ Internal Audit Report

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