

Verification Report

Second periodic verification

Report for:

Brestiom Plc

Verification of JI project for
Bulgarian Small Hydro Power Plant (SHPP) Portfolio
(Ref BG 1000158)

Monitoring Period:
01 May 2010 to 31 May 2011

LRQA Reference	: SOF6010110 version 02
Date	: 10 August 2011
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1 Executive Summary

Lloyd's Register Quality Assurance Limited has been contracted by Brestiom Plc, representing the project participants (PP), to undertake the second periodic verification of the approved by the JI parties involved project activity "Bulgarian Small Hydro Power Plant (SHPP) portfolio" project reference number BG1000158 covering the monitoring period from 01 May 2010 to 31 May 2011. The verification has been performed by document review based on the Monitoring Report Version 1.2 dated 27 June 2011, on-site assessment, and interviews with the stakeholders and resolution of outstanding issues and issuance of the verification report.

The project intends to reduce greenhouse gas (GHG) emissions by construction and operation of three small hydro power plants, namely: Lozyata – located at Plovdiv region, Bulgaria having planned nominal capacity of 5,156 kW; Byala Mesta and Cherna Mesta both located in Blagoevgrad region, Bulgaria, both having nominal capacities of 650 kW. All three hydro plants are run of river plants. Lozyata power plant involves operation of Francis turbine and Byala and Cherna Mesta power plants involve the operation of Pelton turbines.

The fulfilment of the requirements as set forth in the Article 6 of the Kyoto Protocol of the United Nations Framework Convention on Climate Change (UNFCCC), the JI Guidelines and relevant decisions of the Conference of the Parties serving as meeting of the Parties to the Kyoto Protocol (COP/MOP) and the Supervisory Committee of the JI (JISC) as well as the Bulgarian JI Track 1 procedure has been evaluated and the conformance to the verification requirements were confirmed based on the given information. A risk based approach was taken to conduct the verification and corrective action requests (CARs), clarifications (CLs) and forward action requests (FARs) were issued for relevant actions by the PP.

The verification team identified, through the verification process, five CARs. The PP has taken actions and submitted to LRQA the revised monitoring report and supporting evidence. The verification team, through the verification process, confirmed that the emission reductions achieved by the project activity during the monitoring period are correctly calculated in the monitoring report Version 1.4 dated 21 July 2011 based on the approved monitoring methodology and the monitoring plan of the determined PDD. Therefore, LRQA determined that the reductions in anthropogenic emissions amount to 22 504 tCO₂e and forward this verification report to Bulgarian authorities for ERUs issuance.

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Abbreviations

CAR	Corrective action request
CEZ	CEZ Distribution AD (Electricity distribution company) part of CEZ Group
CL	Clarification
COP/MOP	Conference of the Parties serving as meeting of the Parties to the Kyoto Protocol
DFP	Designated Focal Point for JI of the host Country
ERs	Emission reductions
ERU	Emission Reduction Unit
EVN	EVN Bulgaria (Power supply and electricity distribution company)
FAR	Forward action request
GHG	Greenhouse gas
IPCC	Intergovernmental panel on climate change
JI	Joint Implementation Mechanism
JI DVM	Joint Implementation Determination and Verification Manual
JI-G	Joint Implementation Guidelines (Decision 9/CMP.1)
JISC	Joint Implementation Supervisory Committee
JI-SSC	Small Scale JI projects
KP	Kyoto Protocol of the United Nations Framework Convention on Climate Change
LR	Lloyd's Register
LRQA	Lloyd's Register Quality Assurance Limited
PDD	Project design document
PP	Project participant
PPA	Power Purchase Agreement
SHPP	Small Hydro Power Plant
tCO ₂ e	Tonne of carbon dioxide equivalent
UNFCCC	United Nations Framework Convention on Climate Change

2 Introduction

The project participant (PP) represented by Brestiom Plc has contracted with Lloyd's Register Quality Assurance Limited (LRQA) to undertake the second periodic verification of the proposed project "Bulgarian Small Hyrdo Power Plant (SHPP) portfolio" covering the monitoring period from 01 May 2010 to 31 May 2011. This report summarises the findings through the verification process that has been conducted on the verification requirements of the JI-G.

The verification has been undertaken by the team formed of the qualified personnel of LRQA as follows.

Lyubka Marinova	LRQA Bulgaria	Team Leader, JI Verifier, Sector Expert
Javier Vallejo Drehs	LRQA Ltd	Technical Reviewer, CDM Verifier, Sector Expert, Decision Maker

Personnel being engaged in a JI project verification are qualified based on the established procedures of LRQA to assure the resource requirements that satisfy all the requirements of competence criteria of the JI accreditation standard for Independent Entities. LRQA is an Accredited Independent Entity, whose Accreditation certificate was issued the 1st August 2011, that holds the full responsibility on decision-making regarding the verification in line with the accreditation requirements of the JISC. The certificate of appointment of the team personnel is attached to this report.

As an Accredited Independent Entity for JI, LRQA is authorized to verify JI Monitoring Reports and certify ERUs under track1 in Bulgaria, in accordance to article 10 of the Bulgarian Regulation for JI track I Projects: "Instruction for Approval of Projects Generating Emission Reduction Units under Track I of the Joint Implementation Mechanism¹"

2.1 Objective

Through the verification activities, the verification team was to confirm that:

- 1) The project activity has been implemented and operated as described in the determined PDD, and that all physical features of the project activity are in place
- 2) The monitoring report (MR) and other supporting documents provided are complete and verifiable and in line with applicable JI requirements
- 3) Actual monitoring systems and procedures comply with the monitoring systems and procedures described in the monitoring plan (MP); and
- 4) The data are recorded and stored as per the approach chosen for baseline setting and monitoring.

The verification followed the requirements of the current version of the JI Determination and Verification Manual (JI DVM) to ensure the quality and consistency of the verification work and the report.

¹ <http://ji.unfccc.int/UserManagement/FileStorage/VUYPR24AS1Q6KFHIOCW9NXE8G05B3>

2.2 Scope

The scope of verification was an independent and objective review of the monitored emission reductions (ERs) against the verification requirements of the JI-G. LRQA followed a risk-based approach in the verification, focusing on the identification of significant risks for implementation of the registered monitoring plan and the resultant emission reductions. The verification statement shall become final on final review by the decision maker of LRQA Ltd.

2.3 GHG Project Description

Project title	Bulgarian Small Hydro Power Plant (SHPP) Portfolio
JI reference	BG1000158
Date of determination	04 June 2010
Applied methodology	AMS-I.D (version 10) Grid connected renewable electricity generation
Crediting period	2008-2012
Project location	Three locations, one at Plovdiv region, Bulgaria and two in Blagoevgrad region, Bulgaria; administrative office in Sofia, Bulgaria
Project participants	Brestiom Plc, Bulgaria Camco International, UK Climate Change Investment I S.A. SICAR, Luxemburg
Monitoring period	01 May 2010 – 31 May 2011

3 Methodology

3.1 Verification approach

LRQA's verification of the project documentation provided by the project participant was based upon both quantitative and qualitative information on emission reductions. Quantitative information comprises the reported numbers in the monitoring report submitted to LRQA. Qualitative information comprises the information on internal management controls, calculation procedures, procedures for transfer of data, frequency of emission reports and review and internal audit of calculations.

As well as the monitoring documentation provided by the project participants, LRQA also reviewed:

- The registered PDD, including the monitoring plan and the corresponding determination report
- Previous verification reports, if any
- The applied CDM monitoring methodology, if approved CDM methodology approach for baseline setting and monitoring chosen
- Relevant decisions, clarifications and guidance from the CMP and the JISC
- Any other information and references relevant to the project's resulting emissions reductions.

LRQA also confirmed that the project participants have addressed FARs identified during previous verification.

3.2 Desk review

The verification was performed primarily based on the review of the monitoring report and the supporting documentation. This process included:

- 1) A review of data and information presented to verify their completeness
- 2) A review of the MP (In case of approved CDM methodology approach chosen also a review of the CDM monitoring methodology), paying particular attention to the frequency of measurements, the quality of metering equipment including calibration requirements, and the QA/QC procedures, and
- 3) An evaluation of data management and the QA/QC system in the context of their influence on the generation and reporting of ERs.

The monitoring report version 1.2 dated 27 May 2011 was initially reviewed and LRQA requested the PP to present supporting information and documents. This additional information and documents were also reviewed by LRQA. The documents reviewed by LRQA are listed in the Appendix A.

Through the verification process, the revised monitoring report and the supporting documents were evaluated to confirm the actions taken by the PP to address the CARs and CLs issued by LRQA. The documents reviewed by LRQA are listed in the Appendix A. LRQA reviewed the final version of the monitoring report Version 1.4 dated 21 July 2011 to confirm that all changes agreed has been incorporated.

3.3 On-site assessment

An on-site assessment was conducted as a part of verification activity and involved:

- 1) An assessment of the implementation and operation of the JI project as per the registered PDD
- 2) A review of information flows for generating, aggregating and reporting of the monitoring parameters
- 3) Interviews with relevant personnel to confirm that the operational and data collection procedures are implemented in accordance with the MP
- 4) A cross-check between information provided in the MR and data from other sources
- 5) A check of the monitoring equipment including calibration performance and observations of monitoring practices against the requirements of the PDD
- 6) A review of calculations and assumptions made in determining the GHG data and ERs, and
- 7) An identification of QA/QC procedures in place to prevent or identify and correct any errors or omissions in the reported monitoring parameters.

The detail of the on-site assessment is as follows:

Date	Location	Subjects covered	Persons interviewed
30/06/2011	SHPP Lozyata, Plovdiv region	1. Visit of project facilities/ changes 2. Metering provisions and calibration 3. Maintenance 4. Training 5. Record keeping	Mr. Yanko Kolentsov – Plant Manager Mr. Manol Kavroshilov – Investment Control
01/07/2011	SHPPs Byala and Cherna Mesta, Blagoevgrad region	1. Visit of project facilities/ changes 2. Metering provisions and calibration 3. Maintenance 4. Training 5. Record keeping	Mr. Halil Avdzhyiski – Plant Manager for Cherna and Byala Mesta SHPPs Mr. Mehmed Mratsev – shift operator at Cherna Mesta SHPP Mr. Ibrahim Manzurski – shift operator at Byala Mesta SHPP
04/07/2011	Sofia office	1. Interviews 2. Document review and data verification	Mr. Petar Ganchev – representative of Brestiom Plc, appointed by Mr. Philip Fotev – Managing Director

For details of all the findings of the desk review and site visit, please refer to the Checklist for Verification in Appendix C.

3.4 Quality of evidence

When verifying the report emission reduction, LRQA ensured that there was a clear audit trail that contained the evidence and records that validate the stated figures. All source documents that form the basis for assumptions and other information underlying the GHG data are shown in Appendix A.

When assessing the audit trails, LRQA also examined:

1. Whether sufficient evidence was available, both in terms of frequency and in covering the full monitoring period
2. The source and nature of the evidence
3. If comparable information was available from sources other than that used in the monitoring report, LRQA cross-checked the monitoring report against the other sources to confirm that the stated figures were correct. The sources and the data referenced are shown in Appendix A.

LRQA also assessed that the data collection system met the requirements of the monitoring plan.

3.5 Resolution of clarification and corrective action requests

LRQA, during this verification, identified issues related to the monitoring, implementation or operation of the proposed JI project activity that could impair the capacity of the proposed JI project to achieve emission reductions or influence the reporting of emission reductions. LRQA has identified, discussed and concluded these issues within the Checklist for Verification – Appendix C.

LRQA has raised a Corrective Action Request (CAR) if one of the following occurred:

1. Nonconformities with the monitoring plan were found in monitoring and reporting, or if the evidence provided to prove conformity was insufficient
2. Mistakes have been made in applying assumptions, data or calculations of emission reductions that will impair the estimate of emission reductions, and/or
3. Issues identified in a FAR during determination to be verified during verification have not been resolved by the project participants.

LRQA has raised a Clarification Request (CL) if information was insufficient or not clear enough to determine whether the applicable JI requirements have been met.

All CARs and CLs raised by LRQA during this verification have been resolved. If this was not completed, the ERs cannot be certified and recommended the issuance of ERUs by the DFP of the Host party.

LRQA has raised a Forward Action Request (FAR) during this verification for actions where the monitoring and reporting require attention and/or adjustment for the next verification period. FARs do not relate to JI requirements for issuance of ERs achieved during the subject monitoring period.

3.6 Internal quality control

The technical review by a qualified person independent from the verification team and a review by an authorised decision maker are conducted before the submission of the verification report to the PP.

4 Verification conclusions

LRQA has undertaken this verification in line with the Checklist for verification (which is based on the Joint Implementation Determination and Verification Manual Version 01-DVM). This section provides an overview of the verification activities and general conclusions. Further details in relation to each element of the DVM and to each finding are shown in the Checklist for Verification – Appendix C.

The Checklist is structured based on the main verification requirements as follows:

- Project approvals by Parties involved
- Project implementation in line with the registered project design document
- Compliance with monitoring plan
- Revision of Monitoring Plan (Applicable if MP is revised by PP)
- Data Management.

4.1 Project approvals by parties involved

LRQA has assessed that the DFP of the Parties Bulgaria and Netherlands, other than the host country, has issued an unconditional written project approval in accordance to paragraph 38 of the JI Guidelines.

4.2 Project implementation in accordance with the registered project design document

LRQA has, by means of a desk review and an on-site visit, assessed that all physical features of the proposed CDM project activity proposed in the PDD are in place and that the project participants have operated the proposed JI project as per this PDD, regarding which the determination has been deemed final and is so listed on the UNFCCC JI website.

For details of the implementation status of the project, the actual operation of the proposed JI project and any information given in the monitoring report that is different from that stated in this PDD², please refer to the Checklist for Verification in Appendix C.

4.3 Compliance with monitoring plan

LRQA has confirmed that:

1. The monitoring plan has been properly implemented and followed by the project participants
2. All parameters stated in the monitoring plan have been sufficiently monitored and updated as applicable, including:
 - a. Project emission parameters
 - b. Baseline emission parameters
 - c. Leakage parameters
 - d. Management and operational system
3. the accuracy of equipment used for monitoring is in line with the relevant requirements provided by the JISC and is controlled and calibrated in line with the monitoring plan:
 - a. monitoring results are consistently recorded as per approved frequency
 - b. quality assurance and quality control procedures have been applied in line with the monitoring plan

For details relating to this section, please refer to the Verification Protocol in Appendix C.

LRQA confirms that monitoring has been carried out in line with the monitoring plan contained in the PDD regarding which the determination has been deemed final.

The “Monitoring Parameters and calibration table” in the Checklist for Verification – Appendix C shows each parameter required by the monitoring plan, and clearly states how LRQA has verified the information flow (from data generation, aggregation, to recording, calculation and reporting) for these parameters, including the values in the monitoring report.

LRQA confirms also that the monitoring period for each component of the JI project is clearly specified in the Monitoring Report in accordance to the PDD, regarding which the determination has been deemed final, and the Monitoring Report does not overlap with other components for which verification were already deemed final in the past.

JI SSC Projects

² And has caused an increase in estimates of the emission reductions in the current monitoring period or is highly likely to increase the estimates of emission reductions in future monitoring periods

LRQA has assessed that the relevant threshold to be classified as JI-SSC projects is not exceeded on an annual average basis during the reporting period.

4.4 Revision of Monitoring Plan

The implemented Monitoring Plan does not need a revision in this stage of the Project implementation and no revised Monitoring Plan has been submitted by PP for this Monitoring period.

4.5 Data Management

LRQA has determined whether:

1. A complete set of data for the specified monitoring period is available
2. The implementation of data collection procedures is in line with the monitoring plan, including the quality control and quality assurance procedures
3. The function of the monitoring equipment, including its calibration status, is in order
4. The evidence and records used for the monitoring are maintained in a traceable manner
5. The data collection and management system for the project is in line with the monitoring plan
6. The calculations of baseline emissions, proposed JI project emissions and leakage, as appropriate, have been carried out in line with the formulae and methods described in the monitoring plan.

For details of whether data were not available because activity levels, or non-activity parameters were not monitored in line with the registered monitoring plan, and for a description of LRQA cross-checked reported data, please refer to the Checklist for Verification in Appendix C.

LRQA confirms that appropriate methods and formulae for calculating baseline emissions, projects emissions and leakage have been followed.

LRQA is of the opinion that all assumptions, emissions factors and default values that were applied in calculations have been justified.

5 Making the monitoring report publicly available

As the project is a Track 1 project following the requirements of the Bulgarian Track 1 procedure publication on JI web site is not possible. This procedure does not stipulate further requirements regarding publication of the monitoring report, but requires the PP to submit the Monitoring and Verification reports to the Bulgarian Ministry for Environment and Water

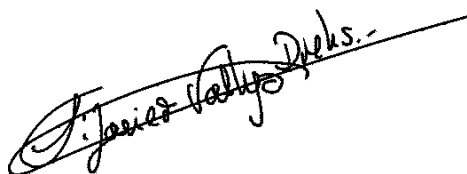
6 Verification Opinion

LRQA has undertaken the second periodic verification of the proposed project activity “Bulgarian Small Hydro Power Plant (SHPP) portfolio” covering the monitoring period from 01 May 2010 to 31 May 2011 based on the requirements of JI as set out in Article 6 of the Kyoto Protocol, the JI Guidelines, subsequent decisions made by the COP/MOP and JISC, and the other rules applicable to the proposed project including the host country’s legislation and its specific requirements for JI projects approval.

Through the verification process, the verification team identified five CARs. The PP has taken actions to address the CARs and CLs and submitted to LRQA the revised monitoring report Version 1.4 dated 21 July 2011 and the other supporting evidences. All CARs have been appropriately closed before the issuance of the verification report.

The verification team is of the opinion that the proposed project activity has been implemented in line with the registered PDD, the MP version 1,2 dated 02 June 2010 complies with the relevant rules and regulations for the establishment of Monitoring Plans, the monitoring complies with the MP and the monitored data and calculation of ERs are assessed and confirmed as correct. Therefore, LRQA hereby issued a positive verification opinion and inform the Bulgarian Ministry for Environment and Water that the reported ERs of “Bulgarian Small Hydro Power Plant (SHPP) portfolio” project, during the monitoring period of 01 May 2010 to 31 May 2011 amount to 22 504 tCO₂e.

Decision Maker



11th August 2011

Javier Vallejo Drehs

JI Quality Manager

7 Appendices

7.1 Appendix A: List of documents reviewed

Category A documents (documents from the PP)

1	PDD for Bulgarian Small Hydro Power Plant (SHPP) Portfolio, version 1.2 dated 2 June 2010
2	Letters of Approval by Ministry for Environment and Water of the Republic of Bulgaria and the Ministry of Economic Affairs the state of Netherlands
3	JI Determination report issued by TUV SUD dated 04/06/2010
4	Verification and Certification Report for the First Periodic Verification issued by LRQA dated 15/06/2010
5	Monthly protocols and invoices for the produced electricity by SHPP Lozyata, SHPP Cherna Mesta and SHPP Byala Mesta
6	Monthly protocols and invoices for the consumed electricity by SHPP Lozyata, SHPP Cherna Mesta and SHPP Byala Mesta
7	Power purchase agreements and annexes
8	Agreements between Brestiom Plc and Cherna Mesta Ltd and Brestiom Plc and Byala Mesta Ltd for the assignment of rights for emission reductions
9	Daily records for the electricity generated for Lozyata SHPP
10	Calibration documents

Category B documents (other documents referenced)

1	AMS-I.D (version 10) Renewable electricity generation for a grid
2	Orders A-412/16.08.2004 and A-102/05.03.2010 of the Chair of State Agency for Metrology and Technical Supervision regarding periods of testing of measurement devices

7.2 Appendix B: Certificate of Appointment

Verification of "Bulgarian Small Hydro Power Plant (SHPP) Portfolio"

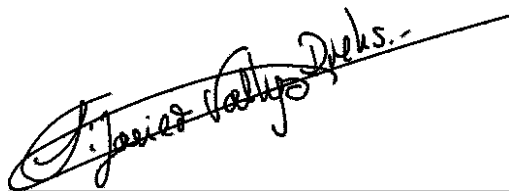
We hereby certify that the following personnel have engaged in the verification process that has fully satisfied the competence requirements of the verification of the JI project activity.

Name of Person**Assigned Roles**

Lyubka Marinova
Javier Vallejo Drehs

Team Leader
Technical Reviewer & Decision Maker

Signed by

Decision Maker

11th August 2011

Javier Vallejo Drehs
JI Quality Manager

7.3 Appendix C: Checklist for Verification

LLOYDS REGISTER QUALITY ASSURANCE

Joint Implementation Mechanism

Checklist for Verification

This document has been produced by the LRQA Verification Team after the completion of the desk review and the site visit. It outlines the verified situation in relation to a number of criteria, including those defined in the Determination and Verification Manual (DVM) produced by the JI Supervisory Committee.

If LRQA has identified issues requiring corrective action or clarification, a reference is made in the 'Action requested' column, and details **are stated in the column marked 'Conclusion'**.

DVM para	Check item	Initial finding	Action requested to project participants (incl. CAR, CL or FAR)	Review of project participants' action	Conclusion
Project approvals by Parties involved					
90	Has the DFPs of at least one Party involved, other than the host Party, issued a written project approval when submitting the first verification report to the secretariat for publication in line with paragraph 38 of the JI guidelines, at the latest?	Letters of approval were presented during first verification in June 2010 from Bulgaria (host country) and the Netherlands. The letters are dated 30.03.2010 and 20.06.2008 respectively. (No 2 in List of reviewed documents)			OK
91	Are all the written project approvals by Parties involved unconditional?	Written project approvals by Ministry for Environment and Water of Bulgaria and the Ministry of Economic Affairs of the Netherlands are unconditional			OK
Project implementation					
92	Has the project been implemented in line with the PDD on which the determination has been deemed final and is so listed on the UNFCCC JI website?	The project implementation was confirmed to be in line with the description in PDD Version 1.2 dated 02/06/2010 (No 1 in List of reviewed documents) during first verification conducted in June 2010. The project as described in the PDD involves construction and operation of three Small Hydro Power Plants (SHPP) – Lozyata, Cherna Mesta and Byala Mesta. The three SHPPs are operated by three legal entities – Brestiom Plc, Cherna Mesta ltd and Byala Mesta Ltd respectively. Agreements were signed to define the responsibilities and obligations of each of the legal entity regarding the implementation of the JI project (No 8 in the List of reviewed documents) The equipment installed and related construction was confirmed during first verification in June 2010. During site visits on 30/06 and 01/07/2011 no changes in equipment and related facilities were established.			OK
93	What is the status of operation of the project during the monitoring period?	During the monitoring period covering 01/05/2010 – 31/05/2011 all three SHPPs were operational.			OK
<i>Procedures regarding changes during project implementation. (if applicable)</i>					
6	Has the PP prepared a detailed description of all changes that have occurred since the determination was deemed final and provided justification for these changes?				NA

DVM para	Check item	Initial finding	Action requested to project participants (incl. CAR, CL or FAR)	Review of project participants' action	Conclusion
7	The physical location of the project can not change				NA
7	If the emission sources have changed, has the PP updated the monitoring plan in this respect?				NA
7	The baseline scenario shall not change.				NA
7	Are the changes consistent with the JI specific approach or the clean development mechanism (CDM) methodology on which the determination was prepared for the Project?				NA
Compliance with monitoring plan					
94	Did the monitoring occur in line with the monitoring plan included in the PDD on which the determination has been deemed final and is so listed on the UNFCCC JI website?	<p>The monitored parameters include generated electricity at all three SHPPs as well as the electricity imported from the grid to cover own needs at time when turbines are not in operation. Reading of one meter at each location is done electronically on monthly basis by power grid operator (EVN for Lozyata SHPP and CEZ for Cherna and Byala Mesta SHPPs). Based on these readings invoices are prepared for the generated and the purchased electricity respectively. The invoices are accompanied by detailed reports for the amount of electricity generated/ purchased signed by both parties. For Cherna and Byala Mesta one invoice used to be issued for the period May-Oct 2010 (inclusive) as the purchased electricity is deducted from the generated electricity during the month and the invoice is issued for the difference. Effective from 1st of November 2010 Annex to Power Purchase agreements for both SHPPs (No 7 in List of reviewed documents) were signed and two invoices are exchanged with the grid operator/power supplier since then – one for the generated and one for the purchased electricity. Data are read also by shift operator on daily basis and these are used for comparison purposes. Emission factor is calculated ex-ante for each calendar year in the determined PDD (page 25, No 1 in the list of reviewed documents). Based on this a fixed emission factor different for each calendar year is used during the crediting period as indicated in the approved PDD and confirmed during first verification visit.</p> <p>The monitoring is in line with the respective description in the PDD.</p>			OK

DVM para	Check item	Initial finding	Action requested to project participants (incl. CAR, CL or FAR)	Review of project participants' action	Conclusion
95 (a)	For calculating the emission reductions or enhancements of net removals, were key factors, for example, those listed in 23 (b) (i)-(vii) above, influencing the baseline emissions or net removals and the activity level of the project and the emissions or removals as well as risks associated with the project taken into account, as appropriate?	According to PDD version 1.2 Emission reductions were calculated by implementing approved CDM methodology AMS-I.D (version 10) Renewable electricity generation for a grid. The emission factor is determined on the basis of National Baseline study of Joint Implementation projects in the Bulgarian Energy Sector. Carbon Emission Factor, published by the Bulgarian Ministry for Environment and Water. The data for Maximum Demand Forecast with HPP included are used. FAR 1 from previous verification report (No 4 in the List of reviewed document) refers to this issue.	CAR 1 – Monitoring report version 1.2 does not clearly specify that emission reductions were calculated by implementing approved CDM methodology AMS-I.D (version 10) Renewable electricity generation for a grid.	CAR 1. Monitoring report version 1.3 dated 11/07/2011 still does not make reference to AMS-I.D (version 10) Renewable electricity generation for a grid. Car 1 is still open. Subsequently presented monitoring report version 1.4 dated 21 July 2011 makes clear reference to AMS-I.D (version 10) Renewable electricity generation for a grid. CAR is closed.	CAR 1 - OK

DVM para	Check item	Initial finding	Action requested to project participants (incl. CAR, CL or FAR)	Review of project participants' action	Conclusion
95 (b)	Are data sources used for calculating emission reductions or enhancements of net removals clearly identified, reliable and transparent?	During the site visits and the interviews it was confirmed that generated electricity and consumed electricity are monitored on monthly basis by grid operator and on this basis monthly protocols are signed by both parties (No 5 and No 6 in the list of reviewed documents) For the calculation of emission reductions are per PDD ver. 1.2 section E.1 the consumed electricity shall be deducted from the generated electricity. Daily records aggregated on monthly basis are used for comparison purposes and the monthly protocols signed by grid operator and SHPP representative are used for the purposes for emission reduction calculations. For Lozyata the daily records are maintained in electronic format (No 9 in the list of reviewed documents), while for the other two SHPPs the daily records were reviewed on paper only during site visit.	<p>CAR 2: Section 2.1 of Monitoring report version 1.2 states that invoices of EVN and CEZ reflect the net generated electricity. This is valid for Cherna and Byala Mesta for the period May2010-Oct 2010, but does not correspond to the confirmed situation for Lozyata SHPP and for Cherna and Byala Mesta for the period Nov 2010 – May 2011, where one monthly invoice for the generated electricity and different monthly invoice for the purchased electricity is issued.</p> <p>CAR 3: In Table 3 presented in the monitoring report ver. 1.2 and the provided Excel spread sheet for Lozyata SHPP data for the generated electricity is used for the emission reductions calculation without deducting the amount of consumed electricity. Same applies for Cherna Mesta SHPP and Byala Mesta SHPP for months Nov 2010- May 2011. The generated and consumed electricity data are not clearly presented as well as the electricity figures used for calculation of emission reductions.</p> <p>CAR 4: Section 3.1 of monitoring report specifies that power generated and supplied is monitored continuously and is recorded on daily basis and aggregated into monthly totals, which is not in line with the confirmed situation during site visits and interviews as indicated in previous column).</p>	<p>CAR 2: The monitoring report version 1.3 dated 11/07/2011 provides explanation that electricity meters are read by EVN and CEZ respectively and readings are confirmed by SHPP operators. CAR 2 is closed.</p> <p>CAR 3: Raw data for generated electricity (Invoices by CEZ) delivered by Brestiom representatives for Byala and Cherna Mesta SHPPs for the period May 2010 – Nov 2010 is not in line with the figures presented in the report. This affects on the figures of the net generated electricity and the emission reduction calculations respectively. The data in monitoring report version 1.4 dated 21 July 2011 and calculation spreadsheet were corrected and correspond to raw data figures. ER calculation has been corrected also. CAR is closed.</p> <p>CAR 4: Section 2.1 of monitoring report version 1.4 dated 21 July 2011 provides explanation about electricity monitoring activities. CAR 4 is closed.</p>	<p>CAR 2 - OK CAR 3 - OK CAR 4 - OK</p>

DVM para	Check item	Initial finding	Action requested to project participants (incl. CAR, CL or FAR)	Review of project participants' action	Conclusion
95 (c)	Are emission factors, including default emission factors, if used for calculating the emission reductions or enhancements of net removals, selected by carefully balancing accuracy and reasonableness, and appropriately justified of the choice?	See under 94 above			OK
95 (d)	Is the calculation of emission reductions or enhancements of net removals calculated based on conservative assumptions and the most plausible scenarios in a transparent manner?	See CAR 3 above			
Applicable to JI SSC projects only					
96	Is the relevant threshold to be classified as JI SSC project not exceeded during the monitoring period on an annual average basis? If the threshold is exceeded, is the maximum emission reduction level estimated in the PDD for the JI SSC project or the bundle for the monitoring period determined?	The project is renewable energy project with maximum output capacity of the project is less than 15 MW (approx 6.5 MW). The threshold is not exceeded. No change in composition of the portfolio – three SHPPs Lozyata, Cherna Mesta and Byala Mesta as indicated in determined PDD version 1.2 dated 02/06/2010.			OK
Applicable to bundled JI SSC projects only					
97 (a)	Has the composition of the bundle not changed from that is stated in F-JI-SSCBUNDLE?	.			NA
97 (b)	If the determination was conducted on the basis of an overall monitoring plan, have the project participants submitted a common monitoring report?				NA
98	If the monitoring is based on a monitoring plan that provides for overlapping monitoring periods, are the monitoring periods per component of the project clearly specified in the monitoring report? Do the monitoring periods not overlap with those for which verifications were already deemed final in the past?				NA
Revision of monitoring plan					
Applicable only if monitoring plan is revised by project participants					
99 (a)	Did the project participants provide an appropriate justification for the proposed revision?				NA

DVM para	Check item	Initial finding	Action requested to project participants (incl. CAR, CL or FAR)	Review of project participants' action	Conclusion
99 (b)	Does the proposed revision improve the accuracy and/or applicability of information collected compared to the original monitoring plan without changing conformity with the relevant rules and regulations for the establishment of monitoring plans?				NA
Data management					
101 (a)	Is the implementation of data collection procedures in line with the monitoring plan, including the quality control and quality assurance procedures?	Data collection, quality control and quality assurance procedures are described in the PDD. It was confirmed during the site visits and the interviews that these are in line with monitoring practices in SHPPs.			OK

DVM para	Check item	Initial finding	Action requested to project participants (incl. CAR, CL or FAR)	Review of project participants' action	Conclusion
101 (b)	Is the function of the monitoring equipment, including its calibration status, in order?	<p>The monitoring equipment involved in data collection comprises of three electricity meters installed in each of the SHPPs (No 10 in the List of reviewed documents), namely:</p> <ul style="list-style-type: none"> ✓ Lozyata SHPP – Electricity meter Elster SN 00440218, Sticker for state metrological check valid till 05/2015, EVN Bulgaria Electrorazpredelenie AD protocols for checking 30264/05.05.2011; 30422/03.05.2011; The electricity meter has replaced electricity meter SN 85890474 with protocol 30241/03.05.2011 installed on 04.10.2010 with protocol 25832/04.10.2010, which replaced electricity meter SN 3300944 on 15.03.2010 with protocol 21726/15.03.2010. The protocols contain information about checking of the respective meter (including information about reference meter used and information about state metrological checking of the respective device). All found in order. Based on verbal information the replacements are done by EVN Bulgaria in order to optimize the remote reading of the data. The location of the meter has been changed in the period from the previous verification that took place in June 2010. The meter is located in the same room but at different place. ✓ Cherna Mesta SHPP – Electricity meter SL 7000 Actaris SN 36038878 mounted on 23.03.2010, Sticker for state metrological check valid till 01/2014; 	CAR 5 – Monitoring report section 3.1 specifies that calibration of the electricity meter at Lozyata SHPP was done on 03-05 May 2010 and 04 Oct 2010 which is not in line with the confirmed situation and provided document as described in previous column.	CAR 5: Monitoring report version 1.4 dated 21 July 2011 states calibration dates corresponding to provided documents. CAR 5 is closed.	CAR 5 - OK

DVM para	Check item	Initial finding	Action requested to project participants (incl. CAR, CL or FAR)	Review of project participants' action	Conclusion
		<p>CEZ Distribution Bulgaria AD protocols for mounting and checking 00003120/23.03.2010 and only checking 1000012440/02.05.2011</p> <p>✓ Byala Mesta SHPP - Electricity meter SL 7000 Actaris SN 36038796, Sticker for state metrological check valid till 01/2014; CEZ Distribution Bulgaria AD protocols for mounting and checking 100003119/23.03.2010 and only checking 1000012441/02.05.2011</p> <p>Based on document review and site visit it was confirmed that all existing electricity meters have hologram stickers confirming state metrological check (due each 4 years in accordance with the provisions of the Order of the Chair of the State metrological Institute dated A-102/05.03.2010. For the previously used electricity meters at Lozyata SHPP the provided documents show regular checking and valid state metrological checks as well.</p>			
101 (c)	Are the evidence and records used for the monitoring maintained in a traceable manner?	The evidence and records related to monitoring are maintained in a traceable manner. Documents are kept locally at SHPPs and all documents			OK
101 (d)	Is the data collection and management system for the project in line with the monitoring plan?	See CAR 2 above			

Monitoring Parameters and Calibration Table:

Complete the following table for each parameter:

Data / Parameter (as in the MP)		Electricity meter Lozyata SHPP (kWh)	Electricity meter Cherna Mesta SHPP (kWh)	Electricity meter Byala Mesta SHPP (kWh)
Value	Ex ante	NA (only data for 1 calendar year are presented in PDD)	NA (only data for 1 calendar year are presented in PDD)	NA (only data for 1 calendar year are presented in PDD)
	Ex-post	NA	NA	NA
Measuring frequency		monthly	monthly	Monthly
Reporting frequency		monthly	monthly	Monthly
Is the measuring and reporting frequency in line with the MP and the Monitoring Methodology?		Yes	Yes	Yes
Recording (Manually / electronically/...)		Electronic	Electronic	Electronic
QA/QC How are values verified? (Cross-checked, double-checked,...)		Cross checked with aggregated daily records for the generated electricity	Cross checked with aggregated daily records for the generated electricity	Cross checked with aggregated daily records for the generated electricity
Type of Monitoring Equipment and Identification number or Reference in the PDD		Electricity meter, no details specified	Electricity meter, no details specified	Electricity meter, no details specified
Is accuracy of the monitoring equipment as stated in the PDD? If not stated in the PDD, does it represent good monitoring practices?		Accuracy not stated in PDD. Electricity meters used are approved to be used for commercial purposes	Accuracy not stated in PDD. Electricity meters used are approved to be used for commercial purposes	Accuracy not stated in PDD. Electricity meters used are approved to be used for commercial purposes
Period of operating time		03/05/2011- till present Previous electricity meters used during the monitoring period: ✓ electricity meter SN 85890474 installed on 04.10.2010 with protocol 25832/04.10.2010, operated till 03/05/2011 ✓ electricity meter SN 3300944 installed on 15.03.2010 with protocol 21726/15.03.2010	23/03/2010-till present	23/03/2010-till present
Instrument type		Electricity meter	Electricity meter SL 7000	Electricity meter SL 7000
Manufacturer, model and serial number		Elster SN 00440218	Actaris SN 36038878	Actaris SN 36038796
Specific location		Room within main building of SHPP next to control room	Outside main building of SHPP	Outside main building of SHPP
Calibration dates		State metrological check 05/2011 Periodical checks by EVN Bulgaria: 03/05/2011 and 05/05/2011	State metrological check 04/2010 Periodical checks by CEZ Bulgaria 23/03/2010 and 02/05/2011	State metrological check 04/2010 Periodical checks by CEZ Bulgaria 23/03/2010 and 02/05/2011
Company performing the calibration		See above	See above	See above

Data / Parameter (as in the MP)	Electricity meter Lozyata SHPP (kWh)	Electricity meter Cherna Mesta SHPP (kWh)	Electricity meter Byala Mesta SHPP (kWh)
Required calibration frequency: Is it in line with the MP? Or does it represent good monitoring practices?	State metrological check for fiscal electricity meters attached to power up to 10 MVA (inclusive) – every 4 years	State metrological check for fiscal electricity meters attached to power up to 10 MVA (inclusive) – every 4 years	State metrological check for fiscal electricity meters attached to power up to 10 MVA (inclusive) – every 4 years
Is calibration valid for the whole reporting period?	Yes Protocols presented for the checking by ENV of other electricity meters used indicate that these have been sealed and possessed the hologram stickers for state metrological checking.	yes	yes
Maintenance	Replacement of meters as indicated above	None	None
Does the data management (from monitoring equipment to emission reductions calculation) ensure correct transfer of data and reporting of emission reductions?	Yes	Yes	Yes
Key reporting risks	In PDD it is stated the electricity meter measures net electricity produced. In fact it measures both electricity produced and electricity consumed. These are accounted separately and the consumed amount shall be deducted from the generated amount.	In PDD it is stated the electricity meter measures net electricity produced. In fact it measures both electricity produced and electricity consumed. These are accounted separately and the consumed amount shall be deducted from the generated amount.	In PDD it is stated the electricity meter measures net electricity produced. In fact it measures both electricity produced and electricity consumed. These are accounted separately and the consumed amount shall be deducted from the generated amount.